A study of analogical change:
vowel alternation in the verb in the Low German and Dutch dialects

Judith Mary Knott

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School of Oriental and African Studies
University of London

Abstract

The purpose of the thesis is to identify the analogical changes which have occurred within a large body of data, and to reduce these changes to a small number of types. Equally importantly, certain conceivable types of change which do not occur will be specified. To this end, the thesis investigates the history of various types of alternation affecting the root vowels of verbs in the Low German, Dutch and Flemish dialects (using data collected from grammars of approximately 80 such dialects). Particular attention is paid to the levelling of alternations and the replacement of one alternation by another.

The first three chapters deal with certain important preliminaries. Chapter 1 contains an introduction to the data, followed by a brief account of the methodology employed, and the aims of the thesis. Chapter 2 discusses markedness theory, and its relevance to analogical change. Chapter 3 deals with aspects of the historical phonology of the dialects, from Proto-Germanic onwards, which are important for the subsequent discussion of the alternations.

The next three chapters are each devoted to one of the types of alternation. In chapter 4 the history of the ablaut alternations is examined, from Pre-OS to the modern dialects. Chapter 5 deals with the "e-raising" and umlaut alternations; and chapter 6 traces the development of alternations in vowel length.

In the final two chapters, conclusions are drawn from the preceding discussion. Chapter 7 briefly considers the characteristics of the different types of alternations, and the relationships between them. In chapter 8, an analysis of the analogical changes observed in the data is attempted. Within the two broad categories of interparadigmatic and intraparadigmatic change, various types of change are isolated, their characteristic features are identified, and their motivation is discussed.

Contents

Tables

Symbols used

> sound change
>> analogical change
--> synchronic derivation

The symbol e (Italic e) will be used for ə, except when it is necessary to distinguish it clearly from e.
Similarly, a (Italic a) will be used for ɐ.

Acknowledgements

I would like to express my gratitude to a number of people for their contributions to this thesis. My thanks must first go to my supervisor, Thea Bynon. She has been a constant source of encouragement and advice during the past four years, and will recognise many of her own suggestions in the thesis.

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I was fortunate to be able to visit the Forschungsinstitut für Deutsche Sprache (Deutscher Sprachatlas) in Marburg in the summer of 1983, to consult material which was unavailable in England, including unpublished dissertations. I very much appreciated the warm welcome and help which I received from the staff of the institute, and would like to thank them all.

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Part one:

Preliminaries

1 Introduction

1.1 Data The data on which this study is based have been collected from grammars of approximately 80 Low German and Dutch/Flemish dialects.[1] The dialects are situated mainly in North Germany, the Netherlands, and Belgium; but formerly German-speaking areas of Poland are included, as are two dialects spoken in German colonies in the Soviet Union. The map on p.9 shows the locations of the dialects, and the list on pp.10 and 11 gives details of the grammars used. Most of the grammars were written in the late 19th and early 20th century, and many of the dialects may since have died out. They will, however, be referred to as "the modern dialects" throughout, to distinguish them from older stages, to which reference will also be made: Old Saxon (OS), Middle Low German (MLG) and Middle Dutch (MDu).[2]

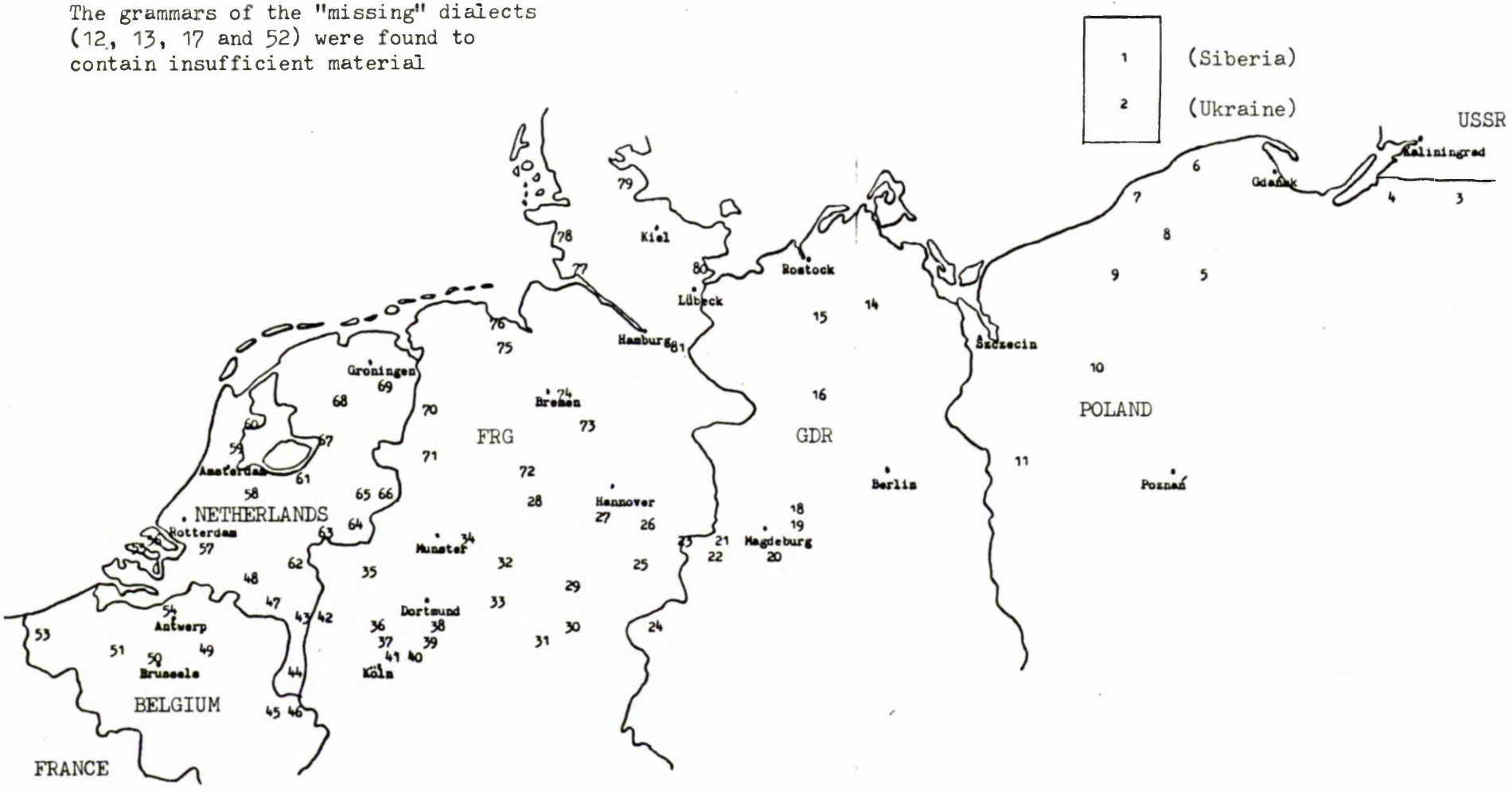
We will frequently also use broader terms to refer to larger areas than individual dialects. The approximate locations of the areas designated by such terms are illustrated on the map on p.12. It should be emphasised that an exact division of the dialects into groups is not intended, and that there is some overlap between the areas.

There are two traditional types of verbs in these dialects, as in all Germanic languages: weak and strong. They are principally distinguished by the fact that in the former the preterite and past participle are formed by the addition of a dental suffix to the root; whereas in the latter they are formed by vowel change. Only the dental suffix of the weak verbs may serve as a diagnostic, however, because some weak verbs also show root-vowel alternation. In some of the modern Low German dialects, the dental suffix of the weak verbs has been lost in the preterite; but in these cases it is retained in the past participle, so that the two types of verbs can still be readily distinguished.

In addition, the weak verbs may be divided into what we shall call "major" and "minor" types. These terms correspond approximately to the more usual terms "productive" and "unproductive" respectively; but

The locations of the dialects

The grammars of the "missing" dialects (12, 13, 17 and 52) were found to contain insufficient material

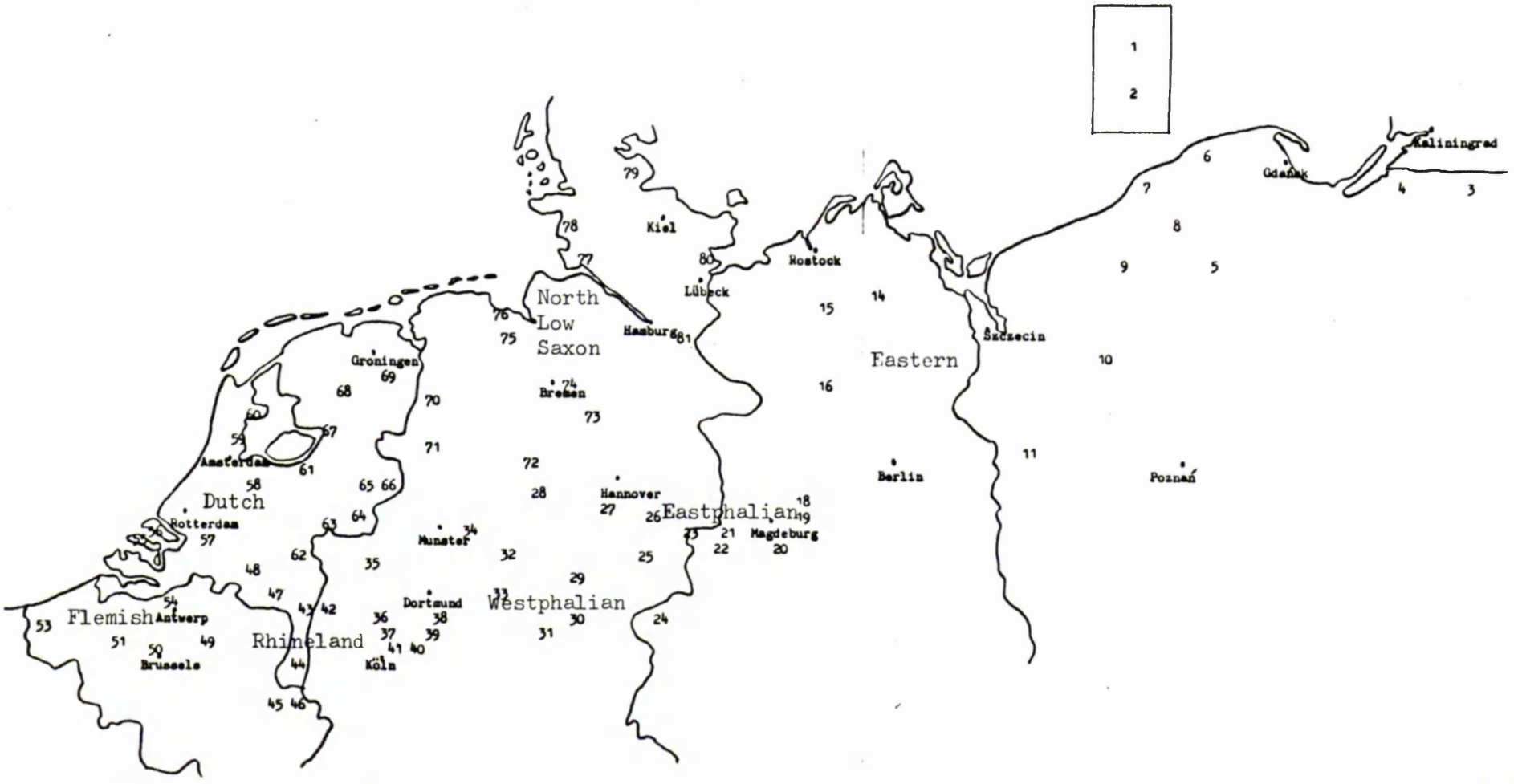


List of dialects and grammars

1. Altai-Gebiet: Jedig 1966
2. Chortitza: Quiring 1928
3. Bieberstein: Tessmann 1966
4. North-East Ostpreussen: Natau 1937
5. Koschneiderei: Semrau 1915
6. Lauenberg: Pirk 1928
7. Schlawe: Mahnke 1931
8. Rummelsburg-Bütow: Mischke 1936
9. Bublitz: Tita 1965
10. Saatzig-Dramburg: Kühl 1932
11. Neumark (Loppow): Teuchert 1907/8
14. Stavenhagen: Grimme 1910
15. Mecklenburg: Nerger 1869
16. Prignitz (Boberow): Mackel 1905-7
18. North-West Jerichow: Krause 1899/1900
19. South Jerichow: Krause 1896
20. Magdeburg: Krause 1895
21. Eilsdorf: Block 1910
22. Dingelstedt (Huymundart): Hille 1939
23. Göddeckenrode/Isingerode: Lange 1963
24. Neuendorf: Schütze 1953
25. Dorste: Dahlberg 1937
26. Lesse: Löfstedt 1933
27. Kalenberg: Mehlem 1944
28. Ravensberg: Jellinghaus 1885
29. Egge: Kleinn 1942
30. Rhoden: Martin 1925
31. Assinghausen: Grimme 1910
32. Gütersloh: Wix 1921
33. Soest: Holthausen 1886
34. Ostbevern: Grimme 1910
35. Dorsten: Pickert 1908/9
36. Mülheim: Maurmann 1898
37. Velbert: Bredtmann 1938
38. Ronsdorf: Holthaus 1887
39. Lüdenscheid: Frebel 1957
40. Wermelskirchen: Hasenclever 1904
41. Remscheid: Holthausen 1885
42. Krefeld: Röttsches 1875
43. Roermond: Kats 1939
44. Heerle: Jongeneel 1884
45. Montzen: Welter 1933
46. Eupen: Welter 1929
47. Limburg: Mertens 1883
48. Kempenland (Oerle): de Bont 1962
49. Aarschot: Pauwels 1958
50. Brussels: Mazereel 1931
51. Zuidoostvlaanderen: Teirlinck 1924

53. Westvlaanderen: Vercouillie 1885
54. Antwerp: Smout 1905
55. Schouwen-Duiveland: de Vin 1953
56. Overflakkee: Landheer 1951
57. Oud-Beierland: Opprel 1896
58. Culemborg: Ausems 1953
59. Waterland: van Ginneken 1954
60. Drechterland: Karsten 1931
61. Barneveld: van Schothorst 1904
62. Grave: Jacob 1937
63. Elten-Bergh: Brujel 1901
64. Vorden (Overijssel): Gallée 1895
65. Goor: Wanink 1948
66. Enschede: Bezoen 1938
67. Kampen: Gunnink 1908
68. Ruinen: Sassen 1953
69. Veenkoloniën: Schuringa 1923
70. Lathen: Schönhoff 1908
71. South Emsland (Lingen): Borchert 1955
72. Lavelsloh (Diepenau): Schmeding 1938
73. Baden (Verden): Feyer 1941
74. Bremen: Bunning 1934/5, Heymann 1909
75. Ammerland: Feyer 1939
76. Friesische Wede: Feyer 1939
77. Glückstadt: Bernhardt 1892/4
78. Heide: Grimme 1910, Jörgensen 1928/9
79. Husby: Bock 1933
80. Ostholstein (Travemünde): Pühn 1956
81. Lauenburg: Heigener 1937

Dialect areas mentioned in the text



since the dialect grammars frequently do not explicitly state whether a particular formation is productive or not, we have avoided this term.[3] We may define the major type within a dialect as the conjugation which applies most generally within a dialect,[4] perhaps with phonologically conditioned variants. A minor type, on the other hand, is one which applies to a set of verbs which must be listed; there are usually several minor weak types within a dialect.

In summary, there are three types of verbs found in all the dialects:[5]

	major	minor
weak	x	x
strong		x

Note that the definition of a minor type also covers the strong verbs: for each dialect, the strong verbs are a closed group, which may be listed; and historically speaking, there have been only a few cases of former weak verbs joining the strong class, whereas the opposite direction of movement is quite common.

We have restricted ourselves to alternations involving the root vowels of verbs. Since vowel alternation is such an important feature of the strong verbs, the main emphasis will obviously be on them. However, as we mentioned above, weak verbs may also show some vowel alternation. Indeed, the minor types of weak verb always show alternation in the root vowel, and these verbs are particularly interesting in that we can observe alternations actually developing during the period for which we have textual evidence.

1.2 Methodology We shall concentrate throughout on alternations between surface forms, rather than on the construction of abstract underlying forms from which the surface forms may be derived. It is intended that the description of the changes will be neutral with respect to any particular theoretical model. The findings could,

perhaps, serve as a basis for future analyses within a more abstract framework.

Our main focus of attention will be the type of change traditionally known as "analogical change". Andersen (1980) rejects this term on the grounds that it is too general, and replaces it with "morphophonemic change", which he defines as "a change in the relations among variants of signantia" (that is, among allomorphs). This covers most of the changes that would traditionally be classed as analogical. Bybee (1980) follows Andersen in replacing "analogical" by "morphophonemic". However, the new usage has some disadvantages. Firstly, it is closely tied to Andersen's philosophy of the sign; and secondly, confusion might arise because the term "morphophonemic" has also been used in other senses, (cf., for example, Matthews 1974, p. 198), compared to which Andersen's definition is rather wide. We have therefore retained the traditional term "analogical change".

In order to escape Andersen's charge that this term is too general, we must attempt to make it more precise. The following working definition will be adopted: an analogical change is one in which a form becomes more similar to another, morphologically related form or forms; the forms may be mophologically related either because they are members of the same paradigm, or because they express the same grammatical category or set of categories. This will be expanded below. It should be pointed out that as it stands, this definition of analogy suggests that the interaction always occurs between the forms of individual lexical items. In fact, it will emerge that many of the changes that we are considering are rather more systematic than this would imply. They affect whole groups of verbs (leaving aside highly frequent lexical items), bound together by the fact that their paradigms are formed in a similar way (for example, they share the same set of root-vowel alternants).

The first part of the definition deals with intraparadigmatic change; this involves the levelling of alternations within paradigms. The particular alternations with which we shall be concerned are those

involving root vowels within the paradigms of verbs. The second part corresponds to interparadigmatic change;[6] again, we shall be concentrating on changes involving the root vowels of verbs. Some of these changes can be described in proportional terms (Paul 1970); but we shall also encounter "non-proportional" interparadigmatic changes, which do not fit this model.

The proportional model has been criticised by Kiparsky (1974) on the grounds that it is both too weak (it cannot account for all cases of analogy) and too strong (it cannot distinguish absurd proportions from those that could define a potential analogical change). Since we are not claiming that all cases of analogy are proportional, the first criticism cannot apply to our use of the term. The second criticism depends on the proportional model being conceived of as a relationship between forms of individual lexical items, in isolation from their morphological function. However, we shall use the term "proportional change" simply of changes which it is possible to describe in proportional terms, as opposed to ones which it is not possible to describe in these terms. The distinction proportional/non-proportional is a convenient way of dividing up changes according to the nature of the interaction between the groups of verbs. In proportional change, the two interacting sets of verbs already share an alternant in common for some morphological category or set of categories; in non-proportional change, they do not. The term proportional, then, should not be taken to imply that the change merely involves an interaction between two individual lexical items, nor between forms in isolation from their morphological function. Rather, particular lexical items are conceived of as representatives of the group to which they belong; and particular forms should be understood in relation to the morphological categories which they express.

At least some of the analogical changes encountered could perhaps be expressed in terms of rule simplification and reordering (cf. Kiparsky (1968)). This treatment is, of course, ruled out here, because it would require a more abstract approach to the phonology than that

which we have adopted here. Moreover, there are also theoretical objections to this kind of analysis; for example, it obscures the crucial role played by the morphological function of the forms undergoing analogical change.

1.3 Aims An attempt will be made to analyse the analogical changes that take place as uniformly as possible, and to reduce them to a small number of types. Equally importantly, some potential types of change that do not in fact occur will be specified. The sample of data on which the study is based is, I feel, sufficiently large for such observations to be of significance. In addition, it seems to be a useful exercise to analyse *all* the changes within a given domain, rather than selecting isolated examples in support of a particular theory. A secondary aim will be to investigate whether the diachronic data shed any light on the synchronic organisation of morphology. This, of course, assumes that linguistic change is a potential "window" on the synchronic structure of language (cf. Kiparsky 1968). As advocated by Kiparsky more recently (1980, 1982a), however, caution will be exercised in exploiting the diachronic data in this way.

Notes to chapter 1

1. The bibliography of dialect grammars in Panzer and Thümmel (1971) was an invaluable aid.

2. Data for the older stages will generally be taken from the following grammars: for OS, Holthausen 1921; for MLG, Lasch 1914; and for MDu, Franck 1910.

3. We have also avoided the terms "regular" and "irregular", since they are potentially ambiguous. "Regular" is sometimes used to mean "without alternations", and at other times to mean approximately the same as our term "major".

4. We may also note that this type of conjugation has a minimal amount of root allomorphy compared to the minor formations. We have not, however, treated this as a defining characteristic, but rather as an empirical observation about the major formation; see chapter 7.

5. The modal auxiliaries, or so-called "preterite-present" verbs, whose present tense derives from an old strong preterite formation, but which have weak preterite and past participle forms, are not included in this study.

6. This covers cases of analogical extension; cf. the discussion of the extension of umlauted plurals in German by Bynon (1977, p.38): "This has resulted in an increase in uniformity in so far as plural formation is concerned but also an increase in the frequency of alternation in the lexicon". We are concentrating on the former aspect: interparadigmatic change as an increase in uniformity in the formation of a particular category. This allows us to include non-proportional interparadigmatic change: that is, the extension of a particular alternant to other forms with a similar morphological function, without reference to other alternants within the paradigm. Non-proportional change cannot be described as the extension of an alternation, since by definition an alternation involves a relationship between two alternants within a paradigm. In schematic terms, non-proportional change does not involve the extension of a relationship x - y, but rather the extension of y, irrespective of x.

2 Markedness

2.1 Markedness criteria There is evidence that morphological categories (such as singular, plural) are arranged hierarchically within their containing category (such as number). (When necessary we will distinguish between categories such as singular and plural and containing categories such as number by referring to the latter as "parameters"). There are various criteria according to which this hierarchy may be determined. However, as pointed out by Greenberg (1966), the criteria tend to converge on particular categories cross-linguistically. That is, within a particular parameter, the criteria tend to select the same category in different languages as more "basic", or "unmarked".[1] Indeed, it is this convergence which allows us to regard morphological markedness as an empirical phenomenon.

Both Jakobson (1939) and Hjelmslev (1953) have suggested sets of criteria for determining markedness relations;[2] these are summarised and discussed by Greenberg (1966). We shall discuss some of these criteria, with particular reference to the following categories which are relevant to the verb in our dialects:

Tense/Aspect	:	Present, preterite, perfect
Mood	:	Indicative, subjunctive
Number	:	Singular, plural
Person	:	1st, 2nd, 3rd

Note that the distinction between the indicative and subjunctive generally survives only in the preterite, and has been lost even there in many dialects. Comments about the frequency and use of these categories are based on a sample of Low German from three chapters of Reuter's "Ut de Franzosentid" (1859). The text contains a considerable amount of direct speech, and this was considered separately from the narrative portions.

(i) Ambiguous meaning of unmarked category versus unambiguous meaning of marked category

Jakobson gives priority to this criterion; for him it is the defining

criterion of markedness relations. He states the definition in the following terms (1957): "The general meaning of a marked category states the presence of a certain property A: the general meaning of the corresponding unmarked category states nothing about the presence of A and is used chiefly, but not exclusively, to indicate the absence of A". In other words, forms expressing unmarked categories are ambiguous between a general and a specific meaning, whereas forms expressing marked categories always have a specific meaning. According to Greenberg (1966), this is equivalent to Hjelmslev's (1953) criterion of "facultative expression" of marked (or intensive) categories: affixes expressing marked categories may in some languages be optional. We can see how this criterion is similar to Jakobson's if it is put in the following terms. If a language has an optional affix a expressing a particular property A, then the affixless form is ambiguous between a general meaning ("either the presence or the absence of A") and a specific meaning ("the absence of A"), whereas the form with the affix a always expresses the presence of the property A. Hjelmslev is claiming that categories expressed by such optional affixes tend to be marked (or intensive) ones.

Jakobson's criterion, in particular, may be applied to the parameter of tense in our dialects. In the sample of Low German from Reuter (1859), the preterite emerges as the main narrative tense; indeed, this seems to be the primary function of the preterite (see the frequency data below; see also Lindgren 1957). However, this function is not infrequently taken over by the present tense. Note that the present does not appear to be fulfilling any special function here, such as conveying an impression of immediacy. It is simply substituted for the preterite in certain passages. One might speculate that this is a colloquial usage which intrudes into the written language from time to time. This extension of the present into the domain of the preterite might, according to Jakobson's criterion, be taken as evidence for the unmarked status of the present with respect to the preterite.

We may also note, with respect to the category of person, that

Jakobson regards the 3rd person as least marked, according to this criterion (see also Benveniste 1946). He analyses the relations between the three persons into two binary oppositions:

3rd	vs	1st and 2nd
non-personal		personal

2nd	vs	1st
unspecified person (usually addressee)		specified person

In each case, the negatively defined, less specific, member of an opposition is the unmarked category. Thus, the 3rd person is unmarked with respect to both the 1st and the 2nd, and the 2nd person is unmarked with respect to the 1st. This gives the hierarchy 321, in order of increasing markedness.

The use of 3rd person forms in place of 2nd person forms in Low German might perhaps be regarded as evidence, according to this criterion, of the unmarked status of the 3rd person, at least with respect to the 2nd person. In Reuter, the 3rd plural is used as a polite form of address (as in modern German); the 3rd singular is also used as a form of address in certain social contexts.[3] However, care must be taken when using such facts to make judgments about markedness relations. Both of these uses have rather precise functions; they are not simply replacements of one form for another with no change of meaning. This problem is even more apparent if we view these facts with respect to the parameter of number. Clearly, the use of the 3rd plural as a polite form of address for both singular and plural addressees cannot be regarded as evidence of the unmarked status of the plural versus the singular (!), because this usage has a specific function, namely politeness. This phenomenon could, in fact, be analysed in terms of three categories: singular, plural and "polite", of which the category polite is most marked (for example, singular and plural are not distinguished within the category polite; see the criterion of

syncretism below). The plural form would then be being used to express an even more marked category.[4]

(ii) Overt expression of marked category versus zero expression of unmarked category

Both Jakobson and Hjelmslev postulate the criterion that marked categories tend to have overt expression, whereas unmarked categories often remain unexpressed. In other words, there is usually an overt linguistic form expressing the marked member of an opposition, but there may be no corresponding form expressing the unmarked member.

In fact, the terms marked and unmarked are sometimes used simply with respect to this criterion alone: "marked" is used to mean "with an overt marker", and "unmarked" to mean "with an overt marker". As we mentioned above, however, markedness seems to be a wider phenomenon, involving a convergence between various criteria; we will therefore avoid the use of the term with this more restricted meaning.

The criterion of zero expression may be applied to the parameter of tense in our dialects. In almost all dialects, there is a specific preterite marker, -d-, at least in the weak verbs,[5] while the present tense is not overtly marked. The perfect tense also has a specific marker, in that it is formed from the auxiliaries "have" or "be" plus the past participle. According to this criterion, then, both the preterite and the perfect would be marked with respect to the present.

In the strong verbs, we can also apply this criterion to the parameter of mood in some dialects. Where final -e has been retained, the 1st and 3rd singular preterite subjunctive have the ending -e, whereas the 1st and 3rd singular preterite indicative have no suffix:[6]

e.g. 33 (Soest) DRINK

Pret Ind	sg 1/3	drunk
Pret Subj	sg 1/3	drynke

According to this criterion, then, the indicative would be unmarked with respect to the subjunctive. In many dialects, however, final -e has been lost by phonological change, and both forms have zero suffix.

The parameters of person and number intersect in our dialects;

to use Matthews' term (1974, p.147), person and number are expressed cumulatively. It is therefore impossible to say that a particular person has zero expression, or that the singular, for example, has zero expression. However, we can make certain observations about combined person-and- number categories, such as 1st person singular.

There are two sets of dialects in which the 1st singular can be analysed as having zero expression. Firstly, in some dialects (and in standard Dutch), the ending -e of the 1st singular present has been lost, so that this form now has a bare root with no suffix:

e.g. 69 (Veenkolonië[11])

sg	1	wa:rk	"work"
	2	wa:rkst	
	3	wa:rkt	
pl	123	wa:rkn	

Secondly, in some dialects, the 1st singular ending -e has been retained, but the unstressed vowel -e- also appears throughout the present tense paradigm:[7]

e.g. 33 (Soest)

sg	1	koake	"cook"
	2	koakest	
	3	koaket	
pl	123	koaket	

and in the preterite and past participle of the major type of weak verbs:

e.g. Preterite sg 1/3 koakede

Past participle koaket

The -e(-) may therefore be analysed as part of the verbal root, with the result that the 1st singular has zero expression.

It is notable that, in both sets of dialects, it is the 1st singular which has zero expression, and which would therefore, according to the criterion being discussed at present, be analysed as unmarked. This contrasts with the situation found cross-linguistically, where the 3rd singular most frequently has zero expression. It also contrasts

with the analysis of the 3rd person as least marked according to the first criterion discussed above. Of course, it could be argued that these cases of zero expression of the first singular have arisen by an historical "accident": the 1st person suffix has been eroded by sound change, leaving the 1st person without a marker (cf., for example, the genitive plural in Old Church Slavonic). However, there is diachronic evidence, in at least some dialects of the second type described above, that the situation has arisen by a morphological reanalysis of the 1st person form *as though* it had no marker. Briefly, we would expect the 2nd and 3rd singular in some of these dialects to show have lost the unstressed -e- of their endings (see chapter 6). This expected phonological development is retained in many strong verbs. However, in the major type of weak verbs, the -e- has been re-introduced:

	expected	actual
3rd sg	*ma:kt	ma:ket

This can be accounted for by an analogical development, in which the 2nd and 3rd singular are remodelled on the 1st singular, which we would expect to retain its final -e (the unstressed vowel was lost only before obstruents). This presupposes, however, a reanalysis of the 1st singular form as having no marker, rather than as base plus ending -e:[8]

	1st sg ma:k+e	reanalysed as	ma:ke+zero
then	3rd sg *ma:k+t	>>	ma:ke+t

We may therefore conclude that at least some of the cases of zero expression in the first person are not simply the result of sound change.

The analysis of markedness relations between the persons is in general problematic, as we shall see again below. It is clear, however, that the 2nd person is not the least marked person. For example, in our dialects, both the 1st and the 3rd singular have zero expression in the preterite, while the 2nd singular has overt expression. Similarly, none of the other criteria selects the 2nd person as least marked.

(iii) Syncretism in the marked category

The final criterion proposed by Jakobson is that distinctions made

within an unmarked category are often neutralised, or syncretised, in the corresponding marked category. This is also one of Hjelmslev's criteria.

This may be applied to the parameter of tense in our dialects: the 1st and 3rd singular are nearly always distinguished in the present tense,[9] whereas they are always syncretised in the preterite.

The criterion also applies to the parameter of number. The 1st and 3rd persons are always syncretised (in all dialects) in the plural; indeed, in most dialects there is syncretism between all the persons in the plural.

In addition to these criteria suggested by both Jakobson and Hjelmslev, we shall also discuss two of the criteria proposed by Hjelmslev alone: frequency and irregularity.

(iv) Frequency: forms expressing unmarked categories have a higher text frequency than forms expressing marked categories

This seems to be an important criterion, firstly for the practical reasons that it is possible to obtain concrete data, independent of any specific grammatical analysis. Secondly, as Greenberg (1966) points out, it allows a finer gradation among categories than simply the binary relationship marked/unmarked. In connection with this, Greenberg suggests that the greater the frequency disparity between categories, the greater the convergence between the other markedness criteria. Conversely, where the frequency disparity is less overwhelming, such as between the person categories, it is more likely that conflicts between the other criteria will arise. Greenberg, in fact, considers frequency to be the primary factor determining morphological markedness relations. He suggests that all the other criteria may be derivable from this one. Note, however, that he does not consider frequency itself to be an explanatory principle; it is only a symptom, which is itself in need of explanation.

The table below shows frequency data for three chapters of Reuter's "Ut de Franzosentid" (1859). For the parameter of tense/aspect, direct speech and narrative sections are shown separately,

because the differences reveal interesting facts, especially about the use of the preterite. For the parameter of person/number, the sample includes only sections of direct speech; in narrative sections, there was an overwhelming majority of third person forms. It was mentioned above that the 3rd plural is used as a polite form of address, and that the 3rd singular is also used as a form of address, in certain social contexts (see n.3). Instances of 3rd person forms in these usages are included with the 2nd person (singular in all cases); but a separate count of 2nd person singular forms proper is also included.

Narrative (sample size: 652)		Direct Speech (sample size: 572)	
Present[10]	21.32%	Present	63.46%
Preterite[11]	70.25%	Preterite	13.64%
Perfect	1.23%	Perfect	8.57%
Pluperfect	6.75%	Pluperfect	2.27%
Conditional	0.46%	Conditional	0.70%
		Future	2.10%
		Imperative	9.27%

Direct Speech (sample size: 524; excludes imperative)			
1st sg	18.70%	breakdown of 2nd sg	
2nd sg	12.59%	actual 2nd sg	2.99%
3rd sg	58.78%	3rd sg	4.83%
1st pl	2.67%	3rd pl	4.77%
2nd pl	0.38%		12.59%
3rd pl	6.87%		

We shall deal first with tense/aspect. The very high figure for the preterite in narrative sections is indicative of its typical use as a narrative tense. Note that the figure for the perfect is very low here. We would obviously expect the statistics for the sections of direct speech to reflect the spoken language more closely. It is notable that the perfect constitutes a much higher percentage of past tense forms in

direct speech than in narrative:

Past tense forms in narrative		Past tense forms in direct speech	
Pret	89.80%	Pret	55.72%
Perf	1.57%	Perf	35.01%
Plup	8.63%	Plup	9.27%

The preterite still has the upper hand, however, even in the sections of direct speech. This does not accord with the evidence of many of the Low German dialect grammars, which claim that the preterite is rather uncommon. However, this may be accounted for by the fact that there is some narrative even within the sections of direct speech. We have noted that the preterite is the tense used in narrative, and Lindgren (1957) makes the same observation. Narrative is, of course, rather unusual within normal discourse, and this may have made the figure for the preterite artificially high.

In both singular and plural in direct speech, the 3rd person is most frequent, followed by the 1st person, with the 2nd person least frequent. As we mentioned earlier, we have not included figures for person forms in the narrative sections. The order is the same, but 3rd persons forms are in an overwhelming majority. It is possible that the figure for 3rd person forms in direct speech might also be rather inflated, because of narrative within the sections of direct speech. The percentage of 3rd person forms is, for example, rather higher than that found in tests on other languages (based either on records of spoken language, or on plays):

Low German	1st	21.37%
(Reuter)	2nd	12.98%
	3rd	65.65%

compared with:

Russian	1st	31.9%	from Greenberg 1966; in turn from Josselson 1953
	2nd	17.7%	
	3rd	50.4%	
Spanish	1st	30.5%	adapted from Bybee and Brewer 1980; in turn from Juilland and Chang-Rodriguez 1964
	2nd	16.0%	
	3rd	53.4%	
German	1st	29.9%	test on three German plays; figures include singular alone
	2nd	20.8%	
	3rd	49.3%	

It is evident from the table of person/number forms that the singular is far more frequent than the plural. If the imperative is included in the total, we obtain the following figures:

(sample size: 572)

singular	90.91%
plural	9.09%

(v) Irregularity: forms expressing unmarked categories are more likely to show irregularities than forms expressing marked categories

It is perhaps preferable to regard the tendency for forms expressing unmarked categories to show more irregularities than forms expressing marked categories as a symptom, rather than a criterion, of markedness. The tendency may be the result of one of the diachronic manifestations of markedness which we will discuss below: unmarked forms are less likely to be affected by analogical change, and tend to retain the irregularities introduced by phonological change. This will be discussed in more detail below.

In summary, the criteria discussed above, when applied to our dialects, select the following categories as unmarked:

	Tense/ aspect	Mood	Number	Person
(i) Ambiguity	Pres			3rd
(ii) Zero expression	Pres	(Indic)		3rd
(iii) No syncretism	Pres		sg	
(iv) Frequency	Pres		sg	3rd

There is little evidence in our dialects relating to markedness relationships between the categories of mood; even the criterion of zero expression applies only in certain dialects. Evidence from other languages discussed by Greenberg suggests that the subjunctive is marked with repect to the indicative. However, the point should be made that in Low German we are not dealing with a straightforward two-way opposition between the indicative and the subjunctive. Recall that there is no such opposition in the present tense. It is, in fact, inappropriate to talk of the "preterite" subjunctive; this category is not simply in opposition with the preterite indicative, but serves as a general subjunctive, in opposition with *all* indicative tenses. This general subjunctive may be analysed as marked with respect to the indicative tenses as a whole, using, for example, the criterion of syncretism: the tense distinctions made in the indicative are neutralised in the indicative. However, there is no clear case for analysing it as marked with respect to the preterite indicative in particular.

A rather different theory of markedness has been proposed by Mayerthaler (1980), within the theory of "natural morphology". He claims that attributes of the prototypical speaker are unmarked; all other phenomena associated with markedness, including the generally higher frequency of unmarked categories, follow from this principle. For many parameters, this principle gives the same results as the criteria of markedness which we have already discussed. For example, since the prototypical speaker is singular, the category singular will be unmarked according to this principle, just as it is according to

criteria (i), (ii), (iii) and (iv) above. However, there is one important parameter where there is disagreement: person. Obviously, the 1st person, referring to the speaker himself, will be unmarked according to Mayerthaler's principle. The 2nd person will be more marked than the 1st; but, as it always refers to a person, and hence to a potential speaker, it is less marked than the 3rd person, which need not refer to a person at all. Mayerthaler's hierarchy is therefore 123, in increasing order of markedness. This is precisely the reverse of the hierarchy of persons according to Jakobson's definition of markedness. We have seen, however, that there is some degree of disagreement for the category of person even among the criteria suggested by Jakobson and Hjelmslev: for example, the 1st person has zero expression in many of our dialects. It is possible that there are two conflicting forces affecting the relationships between the categories of person: the 3rd person is the most general, and the most frequent category; but the 1st person, as the category of the speaker himself, also shares some "basic" properties (see, for example, Bybee and Brewer (1980)).

2.2 Diachronic manifestations of markedness relations There appear to be two separate, though related, diachronic manifestations of markedness: firstly, forms expressing unmarked categories tend to resist analogical change; and secondly, forms expressing marked categories tend to be remodelled on forms expressing unmarked categories. The first trend applies to both intraparadigmatic and interparadigmatic analogy; the second only to intraparadigmatic analogy. Changes which illustrate these tendencies in our dialects will be pointed out in the discussion of the data.

Neither of these observations is, of course, new. Both of the trends are noted by Mańczak, though he does not use the terms marked and unmarked. For example, his "fourth law" (1980, p.284) states:

"In the case of more frequent and less frequent forms, e.g.

(a) those of the singular - those of the other numbers

(b) those of the indicative - those of the other moods

(c) those of the present - those of the other tenses

(d) those of the 3rd person - those of the other persons

(e) .....

the former remain more than the latter;

the former keep an archaic character more than the latter;

the former cause a re-formation of the latter more often than vice versa;

the former replace the latter more often than vice versa."

All the categories on the left are in fact ones which would generally be analysed as unmarked according to the various criteria discussed above; but Mańczak states the law solely in terms of frequency.

Essentially the same kind of empirical data on analogical change forms the basis of Kuryłowicz's "second law" (1949, p.23):

"Les actions dites "analogiques" suivent la direction: formes de fondation --> formes fondées, dont le rapport découle de leurs sphères d'emploi."

Kuryłowicz explains what he means by "sphères d'emploi" in the following way (with exemplification from Greek adjectives): "Non seulement les sphères d'emploi sont autre chose que les fréquences numériques mais, ce qui est important, elles se laissent déterminer de façon rigoureuse...La sphère de la forme masculine déborde celle du féminin puisqu'il y a des adjectifs du type chrysothronos ou eugenes dont la forme masculine fait double emploi. D'autre part, ce qui est essentiel, la fonction primaire du masculin est le sens personnel "commun" parce que c'est le masculin qui est employé là où le sens est sans importance." This emphasis on the function of the forms is reminiscent of the criterion used by Jakobson in his definition of markedness (criterion (i) above).

Mańcak and Kuryłowicz differ, then, in the factors which they consider to be important in determining the direction of analogical change: Mańczak uses criterion (iv) above, Kuryłowicz criterion (i). In

fact, however, the categories selected by these two criteria largely coincide (which, of course, is why we can talk of markedness as an empirical phenomenon).

More recently, these diachronic tendencies have been dicussed by Bybee and Brewer (1980). They link them closely to the organisation of the *synchronic* morphology, claiming that more frequent, semantically simpler words in a paradigm tend to be stored as autonomous wholes, while the other words are derived from them by rule. In other words, the status of words (autonomously stored versus derived) would be determined essentially by markedness relationships, though Bybee and Brewer decompose the notion of markedness into the two independent factors of frequency and "semantic simplicity". In the synchronic grammar, then, there would be rules for deriving more marked forms from less marked forms. Diachronic remodelling would simply be an extension of the synchronic process of derivation to instances where it did not formerly apply (we shall see in chaper 7, however, that this analysis cannot account for all cases of intraparadigmatic change).

It is significant that Bybee and Brewer include both frequency and semantic simplicity as separate factors. The question arises, whether this is necessary. It is tempting to try to account for the diachronic trends by frequency alone, as Mańczak does. Consider the first trend: forms expressing unmarked categories tend to resist analogical change. This could be restated as: frequent items are less likely to undergo analogical change.[12] This would be supported by the fact that lexical items, as well as morphological categories, also differ in the degree to which they are prone to analogical change. Specifically, there is a tendency for highly frequent lexical items to be resistant to analogical change, while less frequent items undergo analogical change more readily. (Again, this observation is not new; cf. Paul 1970 and Hooper 1976). Unless we wish to say that these items are "unmarked" with respect to less frequent lexical items (!), it might seem preferable to state the diachronic tendency in terms of frequency rather than markedness.

We could also restate the second trend in terms of frequency: less frequent forms tend to be remodelled on more frequent forms. This would have the advantage that it might apply to inter- as well as intraparadigmatic change, whereas the statement in terms of markedness is only applicable to the latter type of change. It will emerge from the data that, given an interaction between two types of verb,[13] it is the type which is found in more verbs which usually acts as a model. There are obviously problems in translating this directly into terms of text frequency. For example, although the overwhelming majority of verbs follow the major weak formation, the strong verbs have a very high text frequency. Nevertheless, the strong verbs are far more heterogeneous than the weak verbs, and it seems likely that the weak formation has a higher text frequency than any one strong formation.

However, although it would be convenient if both of these principles could be stated in terms of frequency, problems arise in this account, especially in the case of the second principle. Frequency alone cannot, for example, account for the remodelling of 3rd on 1st person forms, which occurs frequently in our data. Of course, this cannot be accounted for by semantic simplicity either, if Jakobson's definition is accepted; according to this criterion, the 3rd person is least marked, and the 1st person most marked. However, a semantic account such as Mayerthaler's would account for the "basic" nature of the 1st person. We may conclude that both the frequency of forms and the semantics of the categories they express play a role in determining the direction of analogical remodelling. In many cases, for example in the categories of number, these two factors coincide. Where they do not coincide, as for example in the person categories, either factor may predominate in a given change.

Notes to chapter 2

1. This assumes, of course, that the parameters and categories are comparable across languages.

2. Note, however, that Hjelmslev uses the terms intensive and extensive rather than marked and unmarked respectively.

3. The precise conditions under which this form of address is used are not clear. In the course of the text, Reuter makes the comment: Denn dunn wurden de Mollers noch "Hei" heiten "For at that time millers were still addressed as "he"". This suggests that the usage had died out by the time at which Reuter was writing. The miller is the only character in our sample to whom the 3rd singular is used as a form of address. It is not, for example, used towards servants.

4. We could also analyse this in terms of the reversal of markedness relations in marked contexts (see Andersen 1973): in the marked context of polite forms, the plural becomes unmarked with respect to the singular.

5. In a few dialects, this marker has been lost as a result of the loss of intervocalic -d-; generally, however, it survives even where we would expect this phonological change to eliminate it.

6. Note the alternation in the root-vowel between these forms; this will be dealt with in the discussion of the data.

7. There are also dialects where -e is retained word-finally, in the 1st singular, but -e- has been lost before obstruents, in the 2nd and 3rd singular and in the plural.

e.g. 11 (Loppow)

Pres	sg	1	zete	Pret sg 1	zette
		2	zetst		
		3	zett		
	pl	123	zetn		

In such a paradigm, there is no form which can be analysed as suffixless. Verbs with root-final liquid,nasal or vowel also show such paradigms in Soest.

8. This is exactly parallel to the developments described in Bynon (1977, p.100f.) for Polish and Persian, but there it is the 3rd person which is reanalysed as base + zero ending.

9. The modal verbs are an exception in all dialects. In addition, a few dialects have lost the ending -t of the 3rd singular under certain phonological conditions, with the result that the 1st and the 3rd singular have fallen together in a large number of verbs.

10. The 1st and 3rd singular preterite is sometimes identical with the

3rd singular present, because the final -e is lost. This seems to depend on the initial segment of the following word: -e is lost before a following vowel or a dental consonant. The context is used to determine whether the form is a present or a preterite form.

11. The figures for the preterite include both preterite indicative and preterite subjunctive. These are not distinguished at all in the major weak verb conjugation. In the strong verbs we would expect, according to phonological developments, the indicative and subjunctive to have remained distinct. However, according to Grimme's (1910) grammar of Reuter's native dialect (14: Stavenhagen), the distinction has been lost, with the old subjunctive forms taking over the function of the preterite indicative. In Reuter's text, there is a distinction between forms with umlaut (like the old subjunctive) and forms without (like the old indicative), but their distribution does not seem to correspond to any distinction of mood: we find forms without umlaut where we would expect the subjunctive, and forms with umlaut where we would expect the indicative. It is possible that the distinction in mood had died out completely in Reuter's dialect, but the two sets of forms were still retained in the written language.

12. Of course, this is by no means a new observation, as Best points out (1973): "Häufig vorkommende Formen haben eine grössere Chance, sich in der Sprache zu erhalten bzw. durchzusetzen als selten vorkommende. Diese Feststellung hat eine lange Tradition und wird bis heute kaum einmal ernsthaft angezweifelt".

13. This precondition is important; we cannot say that the model for interparadigmatic change is always the formation which is found in the most verbs (which would, by definition, be the major formation). For example, we frequently encounter changes in which one type of strong verb adopts the formation found in another type of strong verb, rather than the major weak formation.

3 Historical Phonology

3.1 PGmc According to Antonsen (1972), the following vowel system can be reconstructed for early Proto-Germanic (ePGmc):[1, 2]

*i	*u	*i:	*u:		
*e[3]				*ei	*eu
*a		*æ:	*ɔ:	*ai	*au

Between this stage and late Proto-Germanic (lPGmc), certain environmentally conditioned changes took place. The vowel *e was raised to *i (merging with existing *i), in two different environments. Firstly, *e was always raised to *i before a cluster of nasal plus consonant (including a geminate nasal):[4]

*e > *i before *NC

Secondly, it was raised before a syllable (of the same word) containing *i or *u:

*e > *i before *i or *u in the following syllable

The diphthong *eu was also affected:

*eu > *iu before *i or *u in the following syllable

This change is a form of vowel harmony, and can be stated economically in terms of features:

[-high] --> [+high] /_ C(C) [+high]
[-low]

We shall call the effects of these changes "e-raising" (Antonsen and van Coetsem use the term "umlaut", but we shall reserve this term for the phenomenon described in 3.3 below). Note that they introduced alternations into the present tense of some strong verbs. The endings of the singular contained high vowels, which triggered e-raising in the root vowel:

e.g. OS sg 1 hilpu (HELP)
2 hilpis
3 hilpid

while the endings of the single plural form (which is the reflex of the 3rd plural) did not:

pl 123 helpad

Antonsen, along with many other scholars (e.g. Krahe 1969), also postulates a lowering of *i to *e before *a, *æ: or *ɔ: in the following syllable.[5] However, Lloyd (1966) has questioned the status of this lowering; there are many exceptions to it, and cases which do appear to show the change may be accounted for by analogical levelling. He suggests that it has been favoured more on the basis of a supposed parallelism between *i and *u (see the discussion of the lowering of *u below) than on concrete evidence.

We must finally turn to the emergence of a new *e: vowel (this vowel is often referred to as "*e:2", as distinct from "*e:1", which in the reconstruction used here corresponds to *æ:, and which derives from (late) PIE *e:). The vowel is of uncertain origin. It is found in some loan words from Latin, e.g. Gothic mes from Latin mensa; but not all instances can be accounted for in this way (in particular, the *e: vowels of the preterite of class VII strong verbs in the North and West Germanic languages are problematic). Krahe suggests that at least some cases of *e: may be the reflex of the PIE long diphthong *e:i (in the reconstruction of PIE used by Antonsen, this corresponds to the sequence *e:j), but this must remain speculative. Antonsen suggests, after van Coetsem (1970), that *e: is the reflex of ePGmc *ei before *a, *æ: or *ɔ: in the following syllable.[6] The diphthong *ei is generally supposed to have developed to *i:; but van Coetsem argues that this development took place only before a syllable containing *i or *u (that is, in the "e-raising" environment), and that before *a, *æ: or *ɔ: in the following syllable it was lowered to *e:. However, he does not give a detailed demonstration that his account is supported by the distribution of *i: versus *e:. Moreover, his account rests on the questionable assumption that the lowering of *i to *e did take place. We shall therefore leave the question of the origin of *e: open.

Taking these changes into account, Antonsen postulates the following vowel system for lPGmc:

*i *u	*i:	*u:			*iu
*e	*e:				*eu
*a	*æ:	*ɔ:		*ai	*au

3.2 OS One of the most important changes between 1PGmc and OS was the split of *u into two phonemes, OS u and o, after an environmentally conditioned change. It should first be mentioned that *u always remained before a cluster of nasal plus consonant (including a geminate nasal).[7] Note that this condition resembles that under which *e was always raised to *i ; as a result, nasal clusters were never preceded by mid vowels. When this condition did not hold, PGmc *u was lowered to *o before a syllable (of the same word) containing *a, *æ: or *ɔ: (this lowering is also known as "breaking"; Antonsen calls it "a-umlaut"):

*u > *o before *a, *æ: or *ɔ: in the following syllable[8]

The change also affected the diphthong *eu:

*eu > *eo before *a, *æ: or *ɔ: in the following syllable

As a result of the lowering of *u, a new *[o] vowel emerged (PIE *o had merged with *a in PGmc *a). At first, it was simply an allophone of *u ; but the loss of the vowels of unstressed vowels under certain conditions later caused the environment of the alternation to be at least partially obscured. For example, PGmc *a, which was one of the conditioning environments for the lowering of *u in the preceding syllable, was lost in unstressed syllables:

PGmc *wurda(n) "word" > N/WGmc *worda(n) > OS word

The unstressed *a in the reconstructed N/WGmc form is attested only in very early Norse inscriptions (e.g. horna < PGmc *hurna(n)). In the other early Germanic languages, including OS, it had been lost, and the distinction u - o was therefore phonemic.

In our discussion of ablaut in chapter 4, we shall take as our base a reconstructed stage which we shall call "Pre-OS", rather than written OS itself. Certain vowels which appear to have merged in OS are nevertheless distinct in many of the modern dialects, and must be distinguished in the discussion of ablaut; the primary purpose of the

Pre-OS reconstruction is therefore to provide a stage at which they are distinct. The Pre-OS system can be represented as follows:

*i	*u	*i:	*u:		*iu
*e[9]	*o	*e:	*o: < *æ:		*eo
*a		*a: < *ɔ:		*ai	*au

The OS system differs from this system in (apparently) showing two mergers:

*ai > e: merging with Pre-OS *e:

*au > o: merging with Pre-OS *o:

These mergers may, however, be only orthographic. Indeed, in some OS texts the vowels are kept separate: Pre-OS *o: is represented by uo, and Pre-OS *e: by ie. It is not clear whether these symbols actually represent spoken diphthongs. Foerste (1952), for example, suggests that the distinction may be one of height:

*ai > OS ɛ: *au > OS ɔ:

*e: > OS e: *o: > OS o:

There is just one other minor difference between written OS and our reconstructed Pre-OS: we have retained the diphthong *eo unchanged from 1PGmc; in OS the reflex of this diphthong appears as io.

3.3 Umlaut Like e-raising and u-lowering, umlaut is a type of vowel harmony. It involves the fronting, or fronting and raising, of vowels before a syllable (of the same word) containing i, i: or j :

a > e }
o > ø }
u > y }
a: > ɛ: } before i, i: or j in the following syllable
o: > ø: }
u: > y: }

This can be expressed concisely in terms of features:[10]

$$\begin{bmatrix}+\text{back}\\ [-\text{low}]\end{bmatrix} \longrightarrow \begin{bmatrix}-\text{back}\\ [-\text{low}]\end{bmatrix} \;/\; \_\ (C)C\ \begin{bmatrix}-\text{back}\\ [+\text{high}]\end{bmatrix}$$

These changes introduced alternations in, for example, the present tense of some strong verbs: the 2nd and 3rd singular originally had endings

containing -i-, which triggered umlaut in the root vowel, while the 1st singular and the plural had vowels other than -i- in the endings.

In OS texts, only the umlaut of a was expressed orthographically. It involved a merger with existing e, and was therefore phonemically distinct from a (Antonsen 1972); we shall also consider it to have been phonemic in Pre-OS.[11] The other umlauted vowels were at this stage only allophonic variants of the corresponding non-umlauted vowels, and were never distinguished from them in the OS orthography.

Despite the fact that it is usually not marked in the OS script, we know that umlaut must have taken place in OS times or earlier,[12] because by the MLG stage the conditioning environment for the change had generally been lost: the i of unstressed (that is, non-initial) syllables had merged with other unstressed vowels, becoming e (written e). The marking of the now phonemic umlauted vowels was more widespread in MLG, although it was still by no means consistent. MDu, on the other hand, shows little evidence of umlaut, except in the case of a+umlaut, which had merged with e (and even the alternation a - e was often subject to levelling). In the Western Dutch and Flemish dialects, it seems that certain vowels, especially long vowels, never developed distinct umlauted variants at all (Weijnen 1958). For example, Weijnen claims that the vowel oi was not affected by umlaut West of a line from Utrecht to Antwerp.

In general, once the conditioning environment of the change was lost, and the resulting alternations were no longer automatic, umlaut was prone to morphologisation, and to analogical influences. In some cases it was restricted, in others extended. In the modern dialects, therefore, it seems preferable not to treat it as a uniform phonological phenomenon, but to discuss it with reference to the different sets of morphological forms in which it has given rise to alternations. However, there is some evidence that a phonological relationship between an umlauted vowel and its corresponding non-umlauted vowel still remains. A secondary, or analogical umlaut of ai has been created in

many areas: where *aː* has been rounded to *ɔː*, the corresponding umlauted vowel, *ɛː*, has also been rounded to *œː* in just those cases where it alternates with *ɔː* within a paradigm. The cases in question are found mainly in the plural of nouns. Umlaut, then, appears to be a phenomenon which is no longer phonologically conditioned, but in which a simple and uniform phonological relationship between the alternants tends to be maintained.

3.4 Vowel lengthening/shortening These changes took place after the OS stage. Firstly, short vowels were lengthened in open syllables. This change had already taken place before the earliest MLG texts. Secondly, long vowels were shortened before certain consonant clusters (especially clusters ending in *-t*). Before clusters beginning with a dental consonant, this change had already occurred by MLG times; before other consonant clusters it gradually took effect during the MLG period (Lasch 1914). Another change, which appears to be earlier than either of these, is also relevant here: the syncope of the unstressed vowel *e* before an obstruent. To use Kiparsky's terminology (but in a diachronic rather than synchronic sense), this "fed" the shortening of originally long vowels:

loss of *-e-*	CV:CeO	>	CV:CO	(where O represents an obstruent)
shortening	CV:CO	>	CVCO	

and "bled" the lengthening of short vowels in open syllables:

loss of *-e-*	CVCeO	>	CVCO
lengthening	cannot apply to V in CVCO		

The combination of the loss of *-e-* and vowel shortening/lengthening gave rise to many alternations. It should be noted, however, that already in MLG these alternations were often levelled out. In MDu they were even more restricted than in MLG. It is possible that, in the area represented by MDu, syncope and vowel shortening/lengthening occurred in the reverse order, so that syncope neither "fed" shortening:

shortening	cannot apply to	CV:CeO	
loss of -e-	CV:CeO	>	CV:CO

nor "bled" lengthening:

lengthening	CVCeO	>	CV:CeO
loss of -e-	CV:CeO	>	CV:CO

Alternatively, the changes may have occurred in the same order as in MLG, but the alternations in vowel length may have been extensively levelled out within paradigms in MDu:

loss of -e-	CV:CeO	>	CV:CO
shortening	CV:CO	>	CVCO
analogy	CVCO	>>	CV:CO

loss of -e-	CVCeO	>	CVCO
lengthening	cannot apply to	V in CVCO	
analogy	CVCO	>>	CV:CO

This problem, and those posed by the modern dialects, will be dealt with in more detail in the chapter on vowel shortening and lengthening.

Most of the modern dialects show the effects of vowel lengthening/shortening. However, in some Western Dutch dialects, which reflect the MDu situation quite closely, there are no alternations in vowel length within paradigms. It should also be noted that in the Westphalian dialects there has been diphthongisation rather than lengthening of originally short vowels in open syllables. These diphthongs are of the type ee, oe.

3.5 Other changes In both MLG and MDu, i merged with e when lengthened in open syllables:[13]

i > ɛː in open syllables

e > ɛː in open syllables

A similar change affected u and o in open syllables:[14]

u > ɔː in open syllables

o > ɔː in open syllables

In many of the modern dialects, especially East- and Westphalian, the

reflexes of i and e, u and o, in open syllables, remain distinct. The map on p.43 gives details about these mergers.

We mentioned on p.38 that Pre-OS *e: and *ai, and Pre-OS *o: and *au, are not distinguished in the OS orthography; this is also true in MLG. In MDu, however, the vowels are distinguished orthographically in the following way:[15]

Pre-OS *e: > MDu ie

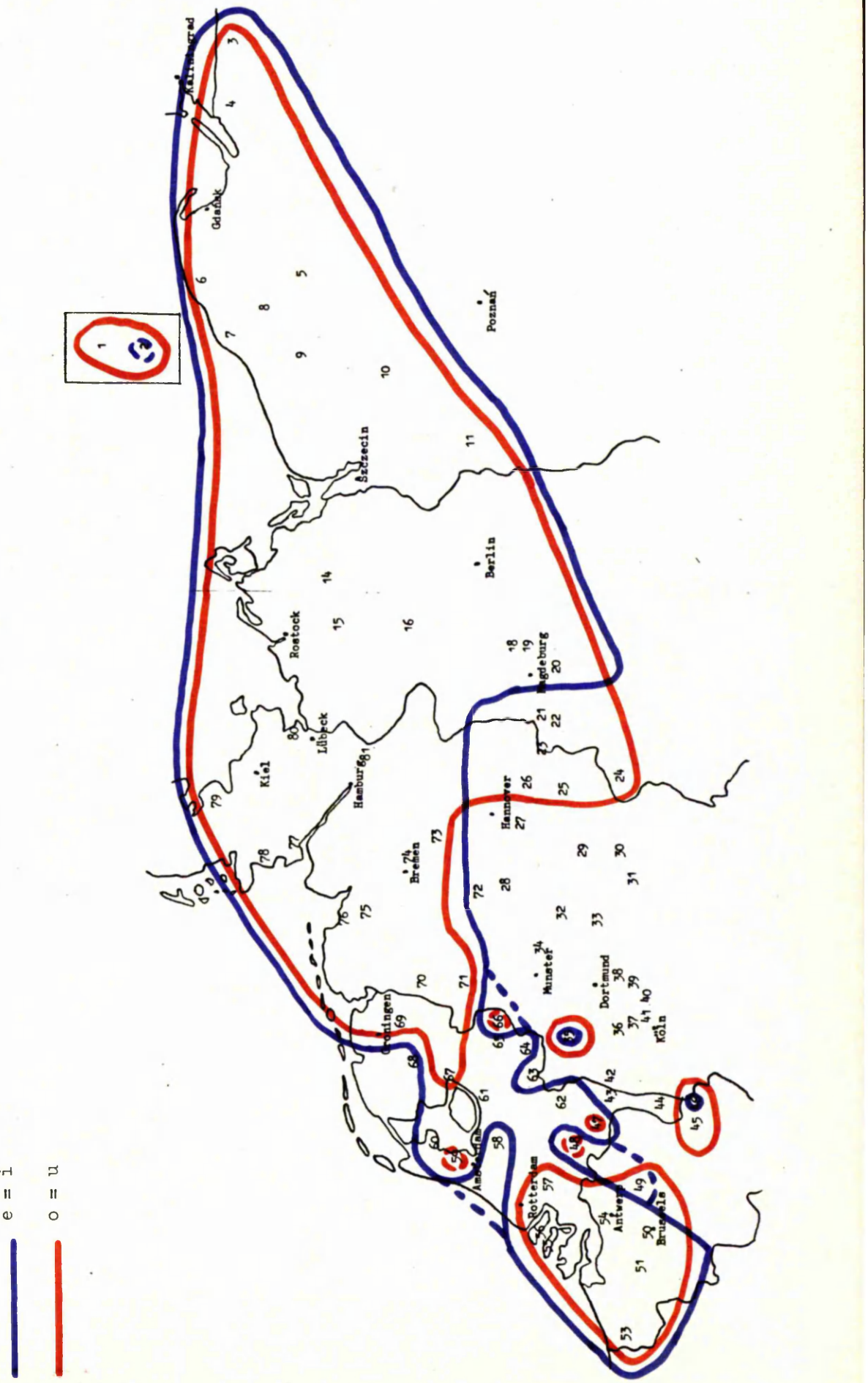
Pre-OS *ai > MDu e(e) (e in open syllables, ee in closed)

Pre-OS *o: > MDu oe

Pre-OS *au > MDu o(o) (o in open syllables, oo in closed)

Similarly, in many modern dialects these reflexes have remained distinct; the distinction between the reflexes of Pre-OS *o: and *au is especially persistent. The map on p.44 shows the extent of mergers involving these vowels in the modern dialects. Note that in some dialects *ai has split into two reflexes, one of which has merged with *e: while the other remains distinct (this situation is represented by a dotted line on the map).[16] One of the two reflexes is sometimes called "ai-umlaut" in the dialect grammars; if either of the two reflexes has merged with *e:, it is usually this one. Whether the split is in fact due to umlaut is debatable; Schirmunski (1962), for example, attributes it to different developments in monosyllables and polysyllables.

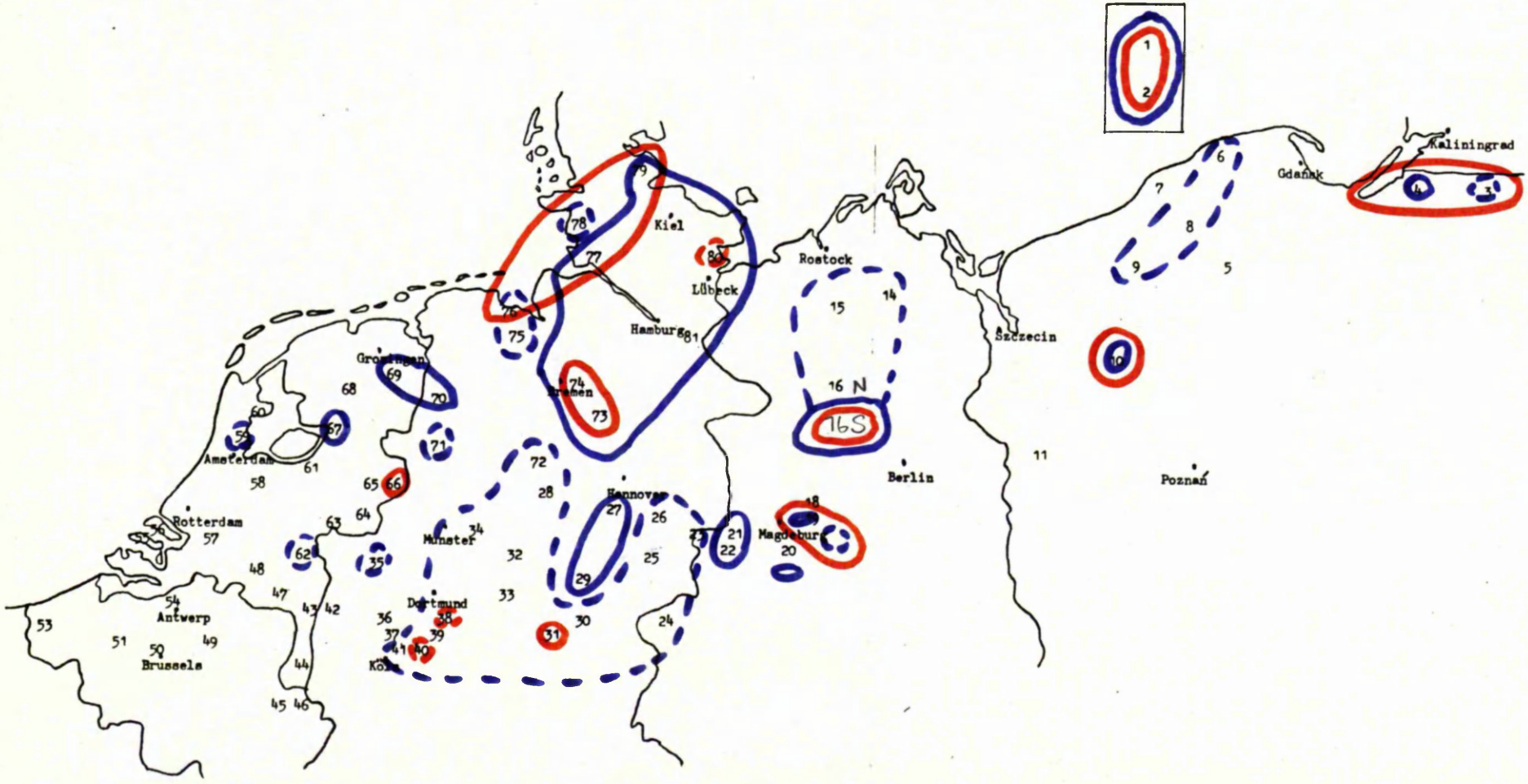
The merger of e and i, o and u in open syllables



The merger of *e: and *ai, *o: and *au

*e: = *ai

*o: = *au



Notes to chapter 3

1. Except where specifically marked as allophonic, by square brackets, vowels should be understood as phonemic.

2. Antonsen uses the following reconstruction of the (late) PIE vowel system:

*[i]		*[u]	*i:	*u:
*e	*ə	*o	*e:	*o:
	*a		*a:	

The following changes link this system with the ePGmc system:

*o, *ə and *a merged in *a

*o: and *a: merged in *ɔ:

*e: > *æ:

Note that in this reconstruction of PIE, *[i] and *[u] are syllabic allophones of the consonants *j (= Antonsen's *y) and *w. Equally, syllabic allophones *[l̥], *[r̥], *[m̥] and *[n̥], of the consonants *l, *r, *m and *n can be reconstructed for PIE. Antonsen assumes that *i and *u had become phonemic in ePGmc (using the argument of "system balance"), but that *[l̥], *[r̥], *[m̥] and *[n̥] remained allophones of *l, *r, *m and *n in ePGmc; by lPGmc they had developed into the sequences *ul, *ur, *um and *un respectively.

3. It has been suggested (e.g. Marchand 1957) that *i and *e were not phonemically distinct at this stage; Antonsen rejects this suggestion, however, mainly on the evidence of OE and ON.

4. This conditioning is reflected precisely only in OHG. In the other North and West Germanic languages, it apppears that e is sometimes raised before a single nasal.

5. According to some handbooks, lowering also took place before a syllable containing *e, but Antonsen considers *e to be a "neutral" environment with respect to raising/lowering, equivalent to the absence of a following syllable.

6. See chapter 4 for van Coetsem's account of how *ei arose in the preterite of class VII verbs.

7. As we noted with reference to e-raising, this conditioning is precisely reflected only in OHG. In the other North and West Germanic languages, a single nasal, or even a labial consonant, can sometimes have the same effect as a nasal cluster.

8. Some handbooks also include following syllables containing *e in this environment; cf. n.5 above.

9. Pre-OS *e derives not only from lPGmc *e, but also from the umlaut of *a ; see the discussion of umlaut below.

10. This assumes that a and a: were back vowels at this stage. If not, the fronting of o, u, o: and u: must be expressed separately from the raising of a and a:. Kiparsky's (1968) umlaut rule should be mentioned here. He does assume that both a and a: were back vowels, and that both were fronted in the relevant environment. However, he argues that only the short vowel a was raised to e, while a: was only fronted to æ:. He therefore proposes the following umlaut rule:

$$[+back] \;>\; [-back] \;/\; \_\ (C)C\ [-back]$$
$$\langle[-long]\rangle \qquad \langle[-low]\rangle \qquad [+high]$$

The angled-bracket notation can be interpreted as follows: all [+back] vowels become [-back] in the given environment; if in addition a vowel is [-long], then it also becomes [-low].

This might be a possible analysis of the situation in Low German. Indeed, the special status of a+umlaut (in that it merged with existing e and was consequently marked in the script in OS) would tend to support this analysis. For the sake of simplicity, however, we have chosen the analysis in which a: is raised as well as fronted by umlaut. This seems reasonable in view of the fact that, as soon as the umlaut of a: is marked in the MLG orthography, the spelling e is used (though the evidence of modern dialects shows that this e: remained distinct from other long e vowels in at least some dialects).

11. This is sometimes called the "primary" umlaut of a (cf. Antonsen 1972); when the cluster ht (and sometimes also rw, rd) intervened between the a and the i or j of the following syllable, the umlaut of a was not marked in the OS script (Holthausen 1921), and we may therefore conclude that in this environment it had not merged with existing e at this stage.

12. Indeed, Antonsen (1972) claims that allophonic umlauted variants were already present at the 1PGmc stage.

13. The resultant vowel is not distinguished from e: < Pre-OS *e: and *ai in the MLG orthography. We will distinguish it, when necessary, by using the symbol ɛ:.

14. Similarly, this o: is not distinguished in the MLG orthography from o: < Pre-OS *o: and *au. Where necessary, we will distinguish it by the symbol ɔ:.

15. Pre-OS *ai is not, however, distinguished from the reflex of *i/*e in open syllables in the MDu spelling; and Pre-OS *au is not distinguished from the reflex of *u/*o in open syllables.

16. It is possible that the phenomenon of split reflexes of *ai is in fact more widespread than represented on the map; see n.37 of chapter 4.

Part two:

The alternations

4 Ablaut

The root-vowel alternations which will be discussed in this section are mainly of PIE origin. They are characteristic of the strong verb in all the Germanic languages, though the various languages have developed the system of alternations in different ways. We can say that, in general, phonological change has tended to lead to a proliferation of alternants, both in terms of the number of verb classes, and in terms of the number of different root vowels within the paradigm. Morphological analogy, on the other hand, has tended to reduce the number of alternants, again both across and within the various classes.

The ablaut system for the Germanic strong verbs has traditionally been divided into seven classes, with subdivisions. These classes are based on a combination of the preterite vowel and the past participle vowel; they are also, at least in part, phonologically conditioned by the root-final consonant or cluster, but this has often become obscured in the Germanic languages, both by phonological and analogical change. In our discussion of ablaut in the Low German and Dutch dialects, we will retain this traditional nomenclature, because it is both familiar and convenient for our purposes. However, reference will also be made to a different method of classification ("e-group" versus "a-group") used by modern scholars such as van Coetsem (e.g. 1972) and Seebold (1970). This is more revealing of the stucture of the ablaut system, and of the way in which the Germanic system developed from its PIE origins.

4.1 Pre-OS

The ablaut system in Pre-OS can be reconstructed in the following way:[1, 2]

	A	B	C	D	
I	*i:	*ai	*i	*i	DRI:B
II(a)	*eo-*iu	*au	*u	*o	LEOG
(b)	*u:	*au	*u	*o	SU:G
III(a) /_ NC	*i	*a	*u	*u	WINN

(b)	/_ LC	*e-*i	*a	*u	*o	HELP
	or /L _ CC					FLEHT
IV	/_ L	*e-*i	*a	*a:	*o	STEL
	or /L _ C					BREK
V		*e-*i	*a[3]	*a:	*e	GEB
		*i	*a	*a:	*e	SITTJ
VI		*a-*e	*o:	*o:	*a	FAR
		*e	*o:	*o:	*a	SWERJ
VII(a)	/_ NC,LC	*a-*e }	*e, *e:	*e, *e:	*a	HALD
	/_ h >	*a: }				HA:H < HANH
(b)		*ai	*e:	*e:	*ai	HAIT
(c)		*a:	*e:	*e:	*a:	LA:T
(d)		*au	*eo	*eo	*au	HLAUP
(e)		*o:	*eo	*eo	*o:	HRO:P

The headings A, B, C, D represent the following sets of forms:

A Pres ind; pres subj; imperative; infinitive

B Pret ind sg 13

C Pret ind sg 2, pl 123; pret subj

D Past participle

The alternation within A in classes II(a), III(b), IV and V is due to e-raising. The alternation within A in classes VI and VII(a), on the other hand, is due to umlaut. The phonological changes which led to these alternations were discussed in chapter 3, and their effects on the morphology will be dealt with in chapter 5. Three points may, however, be mentioned here. Firstly, the e-raising and umlaut alternations differed from each other in the distribution of alternants:

e-raising:	Pres ind sg	*i	vs	pl	*e
umlaut:	Pres ind sg 2, 3	*e	vs	sg 1; pl	*a

Secondly, the root vowel of "j-present" verbs such as SITTJ (class V) and SWERJ (class VI) was affected by e-raising or umlaut in *all* the present tense forms and in the infinitive. Thirdly, there was probably

also an *allophonic* alternation due to umlaut in classes II(b) and VII(a2), (c) and (d): e.g. [u:] versus [y:] in II(b).[4] However, at this stage, we can assume that only the umlaut of a was phonemic (it seems to have merged with existing e ; note that it is written as e in the OS orthography). An allophonic alternation should also be assumed (in all classes but I and VII) between the plural preterite indicative on the one hand, with a non-umlauted vowel, and the 2nd singular preterite indicative and the preterite subjunctive on the other, with an umlauted vowel.

We have used in the table above the traditional system of seven classes. Classes VI and VII, however, differ from the other five classes in several ways. Two distinctive characteristics of classes VI and VII are evident from the table above: the preterite has the same vowel throughout (i.e. B = C); and the alternant of the present (A) is the same as that of the past participle (D) (though this is also true of class V). In addition, the A alternants of classes VI and VII (except VII(c) and (e)) derive from PGmc *a or from diphthongs containing *a, while the A alternants of classes I to V (except II(b)) derive from ePGmc *e (> lPGmc *e or *i), or from diphthongs containing *e :[5]

	Pre-OS		ePGmc		Pre-OS		ePGmc
I	*i:	<	*ei	VI	*a	<	*a
II(a)	*eo	<	*eu	VII(a)	*a	<	*a
III(a)	*i	<	*e		(*a:	<	*an /_ h)
(b)	*e	<	*e	(b)	*ai	<	*ai
IV	*e	<	*e	(d)	*au	<	*au
V	*e	<	*e				

This led van Coetsem (1972) to divide the verbs into an "e-group" versus an "a-group". The e-group is firmly rooted in PIE; classes I to III reflect the PIE series *e - *o - *zero (cf. Benveniste 1935):[6]

		A	B	C/D		A	B	C/D
I	Pre-OS	*i:	*ai	*i	< ePGmc	*ei	*ai	*i
					< PIE	*ej	*oj	*[i]

cf. Ancient Greek 'leipo: (Pres), 'leloipa (Perf), 'elipon (Aor)

II		*eo	*au	*u-*o	<	*eu	*au	*u
					<	*ew	*ow	*[u]

cf. Homeric Gk e'leusomai (Fut), ei'le:loutha (Perf), 'e:luthon (Aorist)

III(a)		*iN	*aN	*uN	<	*eN	*aN	*[N]
					<	*eN	*oN	*[N]
(b)		*eL	*aL	*uL-*oL	<	*eL	*aL	*[L]
					<	*eL	*oL	*[L]

cf. Ancient Gk 'derkomai (Pres), 'dedorka (Perf), 'edrakon (Aor)
(Gk ra < PIE *[r])

It has proved more difficult to relate the a-group to PIE origins. In particular, the origin of the *e: vowel of the preterite of class VII(b) and (c) has raised considerable controversy. This vowel is the reflex of 1PGmc *e: or "*e:2".[7] Its cognate is found in these preterite forms in all the North and West Germanic languages, whereas in Gothic the corresponding verbs form the preterite by reduplication (haitan - preterite haihait), or by reduplication plus ablaut (le:tan - preterite lailo:t).[8] Comparison between the North/West Germanic forms and the Gothic forms has led some scholars (e.g. Lüdtke 1957) to the view that at least the instances of *e:2 in these preterite forms arose through the contraction of reduplicated forms such as are found in Gothic. This would be supported by relic OE forms with partial contraction, such as ha:tan - preterite heht, le:tan - preterite leort). Van Coetsem (e.g. 1972), however, has proposed a radically different solution to the problem, by deriving *e:2 from ePGmc *ei before a syllable containing *a, *æ or *ɔ. He claims that ePGmc *ei arose in class VII (b) (cf. Pre-OS HAIT) preterites in the first place by "mirror analogy" between the a-group and the e-group.[9] This same process would also account for the ePGmc *eu in the preterite of class VII(d)

(cf. Pre-OS HLAUP) and for the *e of class VII(a) (cf. Pre-OS HALD). Van Coetsem seems to regard the ePGmc preterites in *ei, *eu and *e as *alternatives* to reduplicated forms; the North and West Germanic languages would have generalised the former type, Gothic the latter. The process of mirror analogy can be represented as follows:

	e-group			a-group		
	Pres	Pret		Pres	Pret	
I	*ei	*ai	VII(b)	*ai	X	X = *ei
II	*eu	*au	(d)	*au	X	X = *eu
III	*eN, *eL	*aN, *aL	(a)	*aN, *aL	X	X = *eN, *eL

It should be pointed out that the timing of this supposed change is crucial. According to van Coetsem, it occurred in the "e - a period" (corresponding to Antonsen's "ePGmc"), after PIE *o and *a had merged in *a, but while the PIE sequence *ei was still represented by the diphthong *ei. Van Coetsem claims that ePGmc *ei then developed two variants: before syllables containing *i or *u it developed to *i: (which traditionally is assumed to be the reflex in all environments), whereas before syllables containing *a, *æ: or *ɔ: it developed to *e:. This distribution would then, however, have been disturbed by analogical levelling: in the present tense of class I, the *i: variant would have been generalised; while in the preterite of class VII, the *e: variant would have been generalised.

There are three main problems with van Coetsem's account. Firstly, as we discussed in chapter 3, his solution involves accepting the lowering of *i to *e, which has been questioned by some scholars (cf. Lloyd 1966). Secondly, his assumed process of mirror analogy is, to say the least, debatable, and he does not back it up with other, more clear-cut examples. Thirdly, he fails to give a convincing account of the way in which analogy interfered with the distribution of the two variants of ePGmc *ei, to give the observed distribution of *i: versus *e:.

We should also note that van Coetsem's "mirror analogy" account rests on the assumption that in class VII(a) the forms in *e are

original, and those in *e: have been adopted analogically from the other sub-classes of class VII. This is not, however, uncontroversial. Braune (1977), for example, tacitly assumes that *e: is original here; he treats forms in e, which are the norm in OS and are occasionally found in OHG, as cases of vowel shortening before a consonant cluster.

In conclusion, it seems that the twin problems of the origin of "*e:2" and the history of the class VII preterites have still not been satisfactorily solved, and we must leave the question open.

Let us now look at the general trend of development in the ablaut system up to Pre-OS. As we mentioned earlier, the first three classes of the Pre-OS system derive from the single PIE series *e - *o - *zero:

PIE				Pre-OS			
*e+j	*o+j	*zero+[i]	>	I	*i:	*ai	*i
*e+w	*o+w	*zero+[u]	>	II	*eo-*iu	*au	*u-*o
*e+N	*o+N	*zero+[N̥]	>	III(a)	*iN	*aN	*uN
*e+L	*o+L	*zero+[L̥]	>	III(b)	*eL-*iL	*aL	*uL-*oL

Setting aside the extension of the ablaut system within Germanic, we can already see the differentiation which has occurred as a result of environmentally conditioned sound change. The individual changes involved were described in chapter 3; they will therefore only be briefly listed here:

PIE		Pre-OS	
*ej	>	*i:	
*[N̥]	>	*uN	
*[L̥]	>	*uL	(the *u in this sequence may then become *o ; see below)
*ew	>	*eo	before *a, *æ:, *ɔ: in the following syllable
	>	*iu	before *i, *u in the following syllable (the pres ind sg endings contain *i or *u)

*[u] > *u before *NC, and before *u, *i in following syllable

> *o before *a, *ǽ:, *ǫ: in following syllable (the past participle ending contains *a)

*e > *i before *NC and before *i, *u in following syllable

These changes led to the proliferation both of classes, and of alternants within classes. The single PIE series *e - *o - *zero developed into four distinct series, and the number of alternants within a series in some cases increased from three to five. It should be pointed out, incidentally, that when we talk of differentiation we are assuming a concrete phonological analysis; in an abstract model of phonology, the unity of the PIE series would probably still be preserved in Pre-OS.

4.2 OS The OS ablaut system may be represented in the following way (the data are taken from Holthausen 1921):[10]

		A	B	C	D	
I		i:	e:	i	i	dri:ban
II(a)		io-iu	o:	u	o	lioqan
(b)		u:	o:	u	o	su:qan
III(a)	/_ NC	i	a	u	u	winnan
(b)	/_ LC	e-i	a	u	o	helpan
	or /L _ CC					flehtan
IV	/_ LC,NC	e-i[11]	a	a:	o	stelan
	or /L _ C					brekan
V		e-i[12]	a	a:	e	geban
		i	a	a:	e	sittian
VI		a-e	o:	o:	a	faran
		e	o:	o:	a	swerian
VII(a1)	/_ NC, LC	a-e	e, ie[13]	e, ie	a	haldan
(a2)	/_ h	a:	e, ie	e, ie	a	ha:han
(b)		e:	e:, ie	e:, ie	e:	he:tan
(c)		a:	e:, ie	e:, ie	a:	la:tan
(d)		o:	io	io	o:	hro:pan, hlo:pan

This system is less differentiated than that of Pre-OS, as a result of phonological change. The merger of Pre-OS *au and *o: in OS o: has caused the A and D alternants of VII(d) and (e) to become identical, and these series have therefore merged. In addition, as a result of this same change, the B alternants of classes II and VI have become identical. Similarly, the merger of Pre-OS *ai and *e: in OS e: has caused the B alternants of classes I and VII to become identical Note, however, that these may only have been an orthographic mergers (see chapter 3). Indeed, some OS texts keep the reflexes of these vowels distinct: *au is represented by o, and *o: by uo ; *ai is represented by e, and *e: by ie. The reflexes remain distinct in many Low German dialects (especially in the case of *au and *o:).

The distribution of alternants in OS may be illustrated by the paradigm of the class II(a) verb liogan (LEOG):

liogan

		Present indicative			Present subjunctive
sg	1	liugu	sg	1	lioge
	2	liugis		2	lioges
	3	liugid		3	lioge
pl	123	liogad	pl	123	liogen
		Preterite indicative			**Preterite subjunctive**
sg	1	lo:g	sg	1	lugi
	2	lugi		2	lugis
	3	lo:g		2	lugi
pl	123	lugun	pl	123	lugin
		Imperative			**Past participle**
sg	2	liog!, liug!			gilogan
pl	2	liogad!			

4.3 MLG Using the data given by Lasch (1914),we can represent the MLG ablaut system as follows:

		A	A˜	B	C	C˜	D	
I		i:	i	e:[14]	ɛ:[15]	ɛ:	ɛ:	driven
II(a)		e:	y:,y	o:[16]	ɔ:[17]	œ:	ɔ:	legen
(b)		u:	y:,y	o:	ɔ:	œ:	ɔ:	sugen
III(a)	/_ NC	i	i	a	u	y	u	winnen
(b1)	/_ lC	e	i	a	u	y	u[18]	helpen
(b2)	/_ rC	e	e[19]	a	o[20]	ø	o	werpèn
IV		ɛ:	i	a	a:/e:	e:	ɔ:	stelen
V		ɛ:	i	a	a:/e:	e:	ɛ:	geven
		i	i	a	a:/e:	e:	ɛ:	sitten
		e:[21]	y:[22]	a	a:/e:	e:	e:	sen
VI		a:	ɛ:,e	o:	o:	ø:	a:	varen
		a	a,e	o,u[23]	o,u	ø,y	a	wassen
VII(a)	/_ LC,NC	a	a,e	e,i[24]	e,i	e,i	a	vallen
(b)		e:	e:,e	e:	e:	e:	e:	heten
(c)		a:	e,a:	e:	e:	e:	a:	laten
(d)		o:	ø	e:	e:	e:	o:	ropen

(Again, isolated verbs are not included.) Phonological change has led to the proliferation both of series, and of alternants within series. The changes in question have been dealt with in footnotes to the table above; see also chapter 3 for a general outline of the MLG vowel system. We shall discuss here only the most important points.

Whereas in OS there were potentially five alternants in each series (though several classes only had four), in MLG the maximum has increased to six; moreover, the A˜ alternant is more frequently distinct from A than in OS. This latter phenomenon is due to two factors: (a) vowel lengthening in open syllables/shortening before consonant clusters, coupled with the potential loss of the unstressed vowel of the ending (which created clusters and closed syllables); and (b) the phonemicisation, and consequent orthographic marking, of the umlauted variants of the vowels ai, o(:) and u(:). (a) is discussed in chapter 6, and (b) in chapter 5, section 1. Both of these changes resulted in an alternation between:

A: Pres ind sg 2, 3 versus A˜: Pres ind sg 1; pl

This distribution is the same as that of the umlaut alternation a - e in the present tense in OS. It is notable that the distribution of the e-raising alternation (e - i), which in Pre-OS and OS differed from that of umlaut (see p.49), has by MLG fallen into line.

The emergence of the sixth alternant, C˜, characteristic of the preterite subjunctive, is also due to the phonemicisation of the umlauted vowels (the ending of the preterite subjunctive contained the vowel i in OS). This is discussed in chapter 5, section 2. In classes IV and V this umlauted vowel has frequently spread, by analogy, to the plural indicative. The appearance of an umlauted vowel in the 2nd singular indicative of these verbs may similarly be an analogical development, as claimed by Lasch 1914; though it may alternatively be ascribable to phonological change (cf. the 2nd singular indicative ending -i in OS; this is discussed in more detail in chapter 5, section 2).[25]

In many modern dialects, umlauted vowels appear in the preterite indicative of classes II, III and VI, as well as IV and V (see chapter 5, section 2). It is difficult to tell whether this wider phenomenon also has its roots in MLG, because of the inconsistent marking of the umlaut of vowels other than a and a: (indeed, even the umlaut of a: is not marked consistently until the 14th century (Lasch 1914)). Behrens (1924), however, after a very careful examination of the spelling systems of individual documents, claims that the extension of umlaut into the plural (and perhaps the 2nd singular) preterite indicative in classes II and VI is contemporaneous with its extension in classes IV and V, and is part of the same phenomenon. He considers the extension of umlaut in class III, on the other hand, to be much more restricted, and to be centred on Lübeck at this period. It is notable that the extension of umlaut from the subjunctive to *precisely* those forms of the indicative preterite which previously had a different vowel from the 1st and 3rd singular preterite (that is, to those containing the C

alternant) represents a reduction in the number of alternants from six back to five.[26]

Another development frequently seen in the modern dialects is the levelling of the distinction between alternants B and C, so that the preterite indicative has the same vowel throughout (again, the number of alternants within the series is thereby reduced). In class III, the beginnings of this levelling can be seen in MLG; some interparadigmatic levelling also seems to be involved. The table on p.56 summarising the MLG ablaut system shows the following three series for class III:

		A	A˜	B	C	C˜	D
III(a)	/_ NC	i	i	a	u	y	u
(b1)	/_ lC	e	i	a	u	y	u
(b2)	/_ rC	e	e	a	o	ø	o

These are the most frequent alternants, and the ones which would be expected according to phonological developments.[27] However, a more detailed picture would contain the following variants:

III(a)	/_ NC	i	i	a	u,o	y	u,o
(b1)	/_ lC	e	i	a,o	u,o	y	u,o
(b2)	/_ rC	e	e	a,o	o	ø	o

Lasch attributes the o variants in series (a) to sound change, while adding that analogy with series (b2) may also have played a part. The o variants of the C and D alternants in series (b1), on the other hand, are more likely to be analogical, though a sound change may be involved in some areas. An o vowel also appears in the B forms of series (b1); again, this may be due either to sound change or to the analogical influence of series (b2). The frequent and early appearance of o in the B forms of series (b2), however, cannot be attributed to sound change, but must have arisen by analogy with the C and D forms; that is, the preterite 1st/3rd singular forms have been influenced by the plural and 2nd singular preterite and/or by the past participle.

We should also mention a further type of class III verb. Recall that in OS class III(b1) contained both verbs with the root structure (C)C _ LC and verbs with the structure CL _ CC. In MLG, only two verbs

of the latter type remain: vlechten and vechten (those verbs which previously had the structure Cr _ CC, such as OS brestan, have the r *following* the root vowel in MLG: bersten). We would expect these verbs to show the B, C and D alternants a, u, and o respectively in MLG, as in OS. In fact, the following variants are found:

B	C	D
a,o	o,u	o,u

Both intraparadigmatic analogy, and interparadigmatic analogy with other sub-classes of class III, could be responsible for these variants.

The following paradigm illustrates the MLG strong verb conjugation:

class V geven (GEB)

	Present indicative		Present subjunctive
sg 1	geve [ɛ:]	sg 1	geve [ɛ:]
2	gifst (/gevest)	2	gevest
3	gift (/gevet)	3	geve
pl 123	gevet, geven	pl 123	geven

	Preterite indicative		Preterite subjunctive
sg 1	gaf	sg 1	geve [e:]
2	gevest [e:]	2	gevest
3	gaf	3	geve
pl 123	geven	pl 123	geven

	Imperative		Past participle
sg 2	gif! (gef!)		(ge)geven [ɛ:]
pl 2	gevet!		

4.4 MDu Using data given by Franck (1910), we may represent the MDu system as follows:

	A	B	C	D	
I	i:	e:[28]	ɛ:[29]	ɛ:	driven
II(a)	ie	o:[30]	ɛ:[31]	ɛ:	lieghen
(b)	u:	o:	ɔ:	ɔ:	sughen

III(a)	/_ nC	i		a	o[32]	o	winnen
(b)	/_ LC,mC	e		a	o	o	helpen
IV		ɛ:	(-e,i)	a	a:	ɔ:	stelen
V		ɛ:		a	a:	ɛ:	gheven
		i		a	a:	ɛ:	sitten
VI		a:	(-ɛ:)	oe[33]	oe	a:	varen
		a		oe	oe	a	lach(gh)en
VII(a)		a		ie[34]	ie	a	vallen
(b)		e:		ie	ie	e:	heten
(c)		a:		ie	ie	a:	laten
(d)		o:		ie	ie	o:	lopen
(e)		oe		ie	ie	oe	roepen

In one respect the MDu ablaut system is more differentiated than that of MLG. The Pre-OS vowels *ai and *e:, *au and *o:, have not coalesced in MDu: *ai > e:, *e: (and *eo) > ie ; *au > o:, *o: > oe (= [u:]).[35] The B alternants of classes I and II have not, therefore, merged with those of classes VII and VI respectively:

	B alternant			
class I	e: (written e, ee)	vs	class VII	ie
class II	o: (written o, oo)	vs	class VI	oe[36]

In other respects, however, the MDu system is less differentiated than that of MLG. For example, there are usually only four alternants within the paradigm in MDu, compared with six in MLG. The A~ alternant is distinct from A only in a few relic forms. The difference between MDu and MLG in this respect results mainly from the lack of umlaut in MLG (in addition, there is no alternation in vowel legnth within the present tense, except in relic forms; see chapter 6). This, in turn, is due to two factors: firstly, long vowels do not tend to have umlauted variants in Dutch; and secondly, umlaut (along with e-raising) had usually been levelled out by the MDu period. This lack of umlaut also accounts for the fact that there is usually no distinct C~ (preterite subjunctive) alternant. A few authors do show an umlauted vowel, e: (< Pre-OS *a:+umlaut), in the preterite subjunctive of classes

IV and V. According to Franck (1910), these same authors also produce umlauted forms in the preterite indicative plural, as in MLG (Franck does not mention the 2nd singular indicative with reference to this phenomenon); we could speculate that MLG influence might be at work here.

We mentioned that in MLG levelling between the B and C alternants had begun to take place in class III. The first traces of levelling are also found in MDu. Levelling occurs in both directions: a appears in the plural and 2nd singular preterite indicative and in the preterite subjunctive, and o appears in the 1st/3rd singular preterite indicative. The former phenomenon remained only sporadic, however, while the latter, though beginning later, has now become standard in Dutch. This extension of o is not strictly a case of modification of the singular on the model of the plural, since the past participle also shares the root vowel o. It is notable that the 2nd singular and the plural do not behave alike with respect to levelling. Franck claims that the 2nd singular has a different vowel from the 1st/3rd singular only in the oldest texts. We can infer from this that it adopted the vowel of the 1st/3rd singular, a, quite early, only to revert to o again when the whole of the singular adopted this vowel.

Note, incidentally, that class III is more unified in MDu than in MLG: series (b) has not split as it has in MLG, and both series (a) and (b) share the same B, C and D alternants.

The preterite vowel ie (< *ei) in class VII(a) is standard in MDu, though e is also found occasionally (Franck 1910). As we mentioned in the discussion of Pre-OS, it is not clear whether *ei was the original preterite vowel in these verbs, or whether it has been introduced by analogy with the other sub-classes of class VII. However, it is perhaps significant that in MDu the preterite vowel ie has spread *beyond* class VII. In late MDu we see the first signs of the extension of ie to the preterite of some class III verbs with root-final rC, to the class III verb helpen (HELP), and to some class VI verbs such as wasschen. Franck notes that exactly these same verbs in earlier MDu

sometimes show e in the preterite. Again this would be attributable to the influence of class VII, and in particular to VII(a). The similarity in root structure - CVCC - between these verbs and VII(a) may have been significant in this development.

One more case of levelling remains to be discussed: in class IV the D alternant o: tends to displace the C alternant, ai. This may alternatively be analysed as an interparadigmatic change, on the model of class II. In many of the modern dialects, the reflex of this vowel has spread throughout the preterite.

4.5 Modern dialects The ablaut systems of the modern dialects vary considerably from area to area. The Westphalian dialects preserve the MLG system almost intact. Indeed, in some respects the system in these dialects is more complex than that in MLG, because some of the phonological mergers which led to identity between alternants in MLG have not taken place here. In many NLS dialects, on the other hand, there has been much simplification. This has taken two forms. Firstly, the number of alternants within strong paradigms has been reduced: B and C are no longer distinguished, and the preterite subjunctive has often been lost. Secondly, the number of different preterite alternants across classes has been reduced, in some dialects to as few as three. Some of these changes can be ascribed to phonological mergers, which are more numerous in the NLS than, for example, in the Westphalian dialects. However, they can by no means all be accounted for in this way: there have also been numerous analogical changes, both intra- and interparadigmatic. Incidentally, it is notable that it is the preterite which has been most subject to both types of analogical change; and it is the preterite that has suffered the most severe reduction in alternants across classes. This would seem to be symptomatic of the marked status of the preterite (see chapter 3).

We shall deal first with changes affecting the preterite indicative (B and C) alternants, class by class, then with the much less numerous changes in the past participle (D) alternant. We shall not deal here with the alternation within the present tense (A versus A~); see chapter 5 (e-raising and umlaut) and chapter 6 (vowel length) for discussion of this alternation. The preterite subjunctive alternant (C~) is also dealt with in chapter 5; but, insofar as the umlauted vowel of this alternant has spread to the C and even to the B alternant in some dialects, it will also enter into the discussion in this chapter.

4.5.1 The preterite indicative (B and C) alternants

Class I There are four main possibilities for the development of the preterite alternants in class I. These will be represented in terms of the Pre-OS alternants, so that we can compare the direction of levelling across dialects. Of course, the dialects actually show widely differing reflexes of the Pre-OS vowels. The four possibilities are:

		B		C	(D)
Pre-OS		*ai		*i	(*i)
Modern dialects	(a)	*ai		*i	
	(b)	*ai		*ai	
	(c)	*i		*i	
	(d)	*ai	=	*i	(merger by sound change)

In case (b), the alternant of the 1st/3rd singular preterite indicative (the B alternant) has been extended to the 2nd singular and the plural.[37] In some dialects, where Pre-OS *ai has merged with *e: and *eo, this can alternatively be analysed as an interparadigmatic change. The B alternant of class I has in these dialects become identical to that of many class VII verbs, and the spread of this same alternant to the C forms of class I may be analysed as the adoption of the C alternant of class VII (which is the same as the B alternant). The sequence of changes can be represented as follows (the result of the merger of *ai, *e: and *eo is denoted by "*E:"):

	B	C		B	C
I	*ai	*i	> (merger)	*E:	*i
VII	*e:/*eo	*e:/*eo		*E:	*E:
			>> (analogy)	*E:	*E:
				*E:	*E:

This would be a proportional change, based on the shared B alternant, "*E:", of classes I and VII. This analysis is perhaps rendered implausible by the fact that class I verbs greatly outnumber the class VII verbs in question. However, it seems significant that very few of the dialects with merger between *ai and *e:/*eo have levelled in the

opposite direction in class I (that is, in favour of *i, as in type (c)), while elsewhere this direction of levelling is found quite commonly. This suggests that class VII may have had at least some influence on the development within class I.

In type (c), the opposite direction of levelling seems to have occurred: the 1st/3rd singular preterite indicative has been remodelled on the 2nd singular and the plural. However, it must be remembered that the past participle shares the same alternant as the 2nd singular and the plural preterite indicative in this class. We could therefore alternatively analyse (c) as a case of the extension of the past participle alternant to the preterite; or perhaps we could say that the alternant of the 2nd singular and plural was "reinforced" by the past participle.

In addition to these four widespread types, there are also two more unusual sets of alternants, found in some Eastphalian dialects:

(e)	*a	*i	(dialects 23, 24, 25)
(f)	*a	*ai	(dialect 27)

These two types share the feature that the expected B alternant *ai has been replaced by *a. In type (f) this development must have been preceded by the extension of the B alternant *ai throughout the preterite. In type (e) the C alternant is the expected reflex of *i (though in dialect 23, *a has also spread, optionally and in only a few verbs, to the plural). In both cases, the B alternant *a must have been adopted by analogy with classes IV and V. In dialects 24 and 25, class I shares the same past participle alternant as class V (Pre-OS *i has merged with *e in open syllables), and this may have provided the basis for the analogical change, as suggested by Dahlberg (1937) in his grammar of dialect 25. In dialects 23 and 27, on the other hand, the classes do not have this alternant in common. Here, the shared A~ alternant (Pre-OS *i) of classes IV/V and I may have played a part in the development (whereas in dialects 24 and 25 only a few class IV and V verbs still show the A~ alternant *i). However, it seems rather unsatisfactory to account for the same development in two different ways

in adjacent dialects. It is possible that interdialectal influence might be at work here. It should also be noted that there are certain features of the development which neither of these accounts in terms of shared alternants can explain. Firstly, in dialects 23, 25 and 27, the new B alternant is restricted to class I verbs with a root-final voiceless plosive, and is found especially in verbs with root-final t. It may be significant here that the C and D alternants of these verbs are also short vowels (lengthening of Pre-OS *i in an open syllable was followed by shortening before a voiceless plosive). This may have furthered the adoption of a short vowel as the B alternant. Secondly, in dialect 24, the reflex of Pre-OS *a is found not only in all class I verbs, but also in class VII. In the latter case, a proportional account is impossible.

The map on p.67 shows the distribution of these six sets of alternants. It is notable that in the vast majority of cases, all the verbs of class I show the same development. The exceptions are dialects 23, 25, 27, 30 and 40. The fact that the B alternant *a occurs only in a subset of verbs in dialects 23, 25 and 27 has been discussed above. As for the remaining verbs in these dialects: in dialect 25, they show the alternants *ai - *i ; in dialect 23, *ai - *i and *i - *i occur as optional variants; and in dialect 27, *ai - *i and *ai - *ai are optional variants. Dialects 30 and 40 therefore remain to be discussed. In dialect 40, verbs with a root-final voiced consonant show merger between Pre-OS *ai and *i, while verbs with a root-final voiceless consonant have extended the C alternant *i throughout the preterite. This split is ultimately due to the fact that *i was lengthened in open syllables *only* before voiced consonants;[38] and only the lengthened variety of *i has subsequently merged with *ai. In verbs with a root-final voiceless consonant, the reflexes of *ai and *i would therefore have remained distinct, but *ai has been analogically replaced by *i. In dialect 30, verbs with a root-final lenis tend to retain the alternation *ai - *i, while verbs with a root-final fortis have extended the *i alternant throughout the preterite. However,

B - C

Class I

(a) *ai - *i

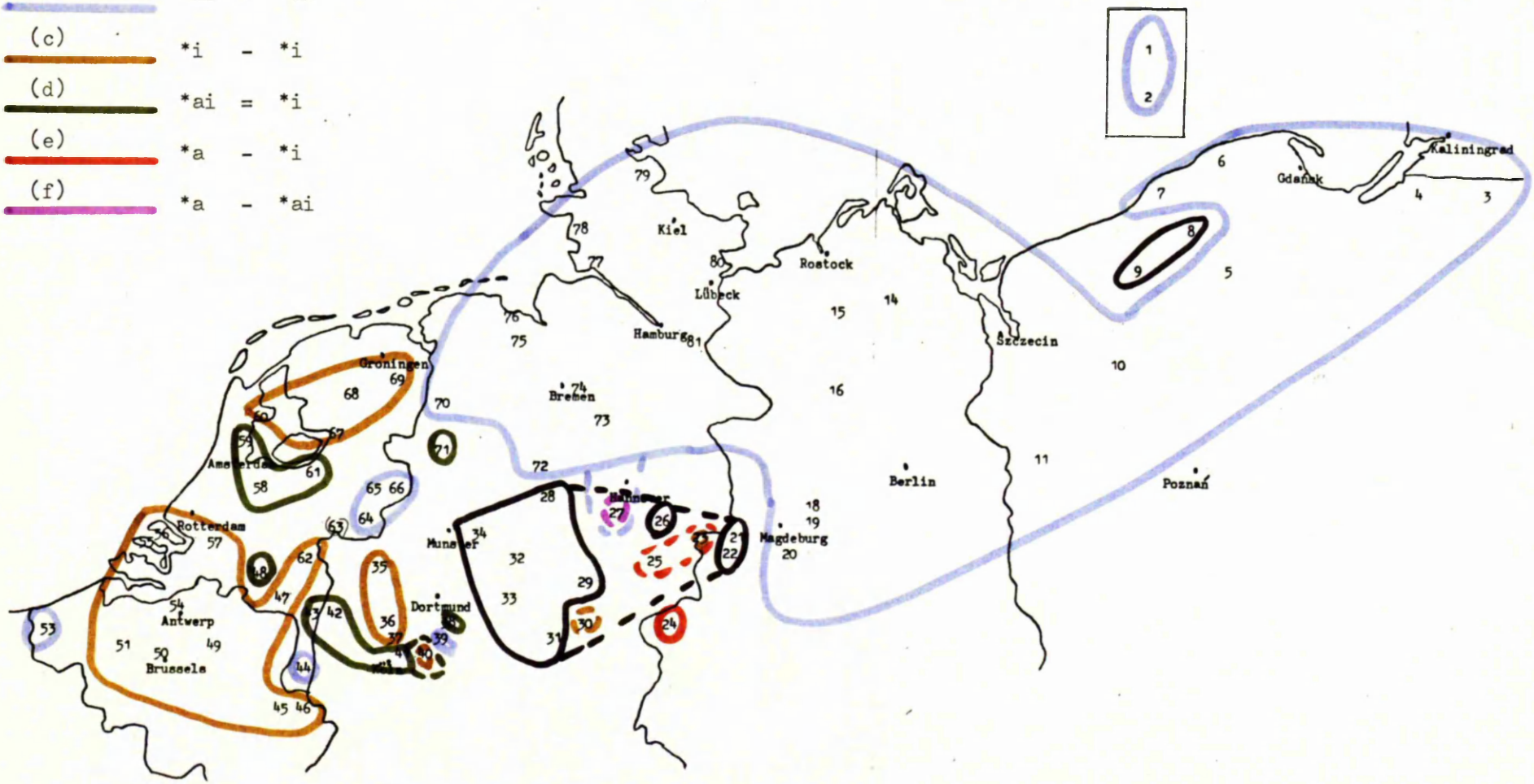
(b) *ai - *ai

(c) *i - *i

(d) *ai = *i

(e) *a - *i

(f) *a - *ai



although the distribution does display some phonological conditioning, this is only approximate. Moreover, unlike in dialect 40, the split here cannot be attributed to phonological change; the phonological criterion must have arisen during the process of levelling. Bybee and Slobin's (1982) concept of the schema could be useful in dealing with this phenomenon. The schema is a representation of prototypical forms belonging to a particular morphological category, such as the preterite tense.[39] We may hypothesise that two schemata for typical preterite 1st/3rd singular forms grew up, consisting of the root vowel plus the root-final consonant:

Pret ind sg 13

Schema 1		Schema 2
...*ai + lenis	versus	...*i + fortis

This does not, of course, explain why the two complementary schemata arose in the first place; rather, it suggests how the phonological criterion might reinforce itself, once the schemata had become established.

Class II There are rather more possibilities for the development of the preterite alternants in class II than in class I, for two reasons. Firstly, the D alternant of this class was distinct from the C alternant in Pre-OS, and it has sometimes influenced both the B and C alternants. Secondly, umlaut is relevant in this class, in that it has produced the separate preterite subjunctive alternant C~,[40] which again has sometimes influenced the alternants of the preterite indicative. Neglecting umlaut, for the present, the following pairs of B and C alternants are found (again represented in terms of the Pre-OS alternants):

		B	C	(D)
Pre-OS		*au	*u	(*o)
Modern dialects	(a)	*au	*u	
	(b)	*au	*au	
	(c)	*u	*u	

(d)	*o		*o	
(e)	*au		*o	
(f)	*au	=	*u	(merger by sound change)
(g)	*o:		*o:	

The distribution of these possibilities is illustrated on the map on p.70. Types (a) and (b) are identical to the corresponding types in class I: in type (a) the reflexes of the Pre-OS alternants are preserved intact; in type (b) the alternant of the 1st/3rd singular (B) has been extended throughout the preterite. In class I we suggested that the influence of class VII may have played a part in the extension of the B alternant *ai, in dialects where *ai had merged with *e:/*eo. Equally, in class II, the influence of class VI may have played a part in the extension of the B alternant *au in dialects where *au has merged with *o:. If we denote the result of the merger of *au and *o: as "*O:", we may represent the sequence of changes as follows:

	B	C		B	C
II	*au	*u	>	*O:	*u
VI	*o:	*o:	(merger)	*O:	*O:
			>>	*O:	*O:
			(analogy)	*O:	*O:

That the influence of class VI may have been of some importance in these dialects is suggested by the fact that very few of the dialects with merger show levelling in the opposite direction in class II.

Type (c) is similar to type (c) in class I, in that the C alternant has replaced the B alternant. However, whereas in class I alternant C is the same as alternant D, in class II this is not necessarily true. Cases where C (Pre-OS *u) and D (Pre-OS *o) have merged by phonological change[41] are shown separately on the map from those where C and D remain distinct:

	(c1)	*u	*u	(*u = *o)
versus	(c2)	*u	*u	(*u ≠ *o)

Nearly all cases of (c) fall into sub-type (c1). The situation here is

B - C

Class II

(a) *au - *u

(b) *au - *au

(c1) *u - *u (*u = *o)

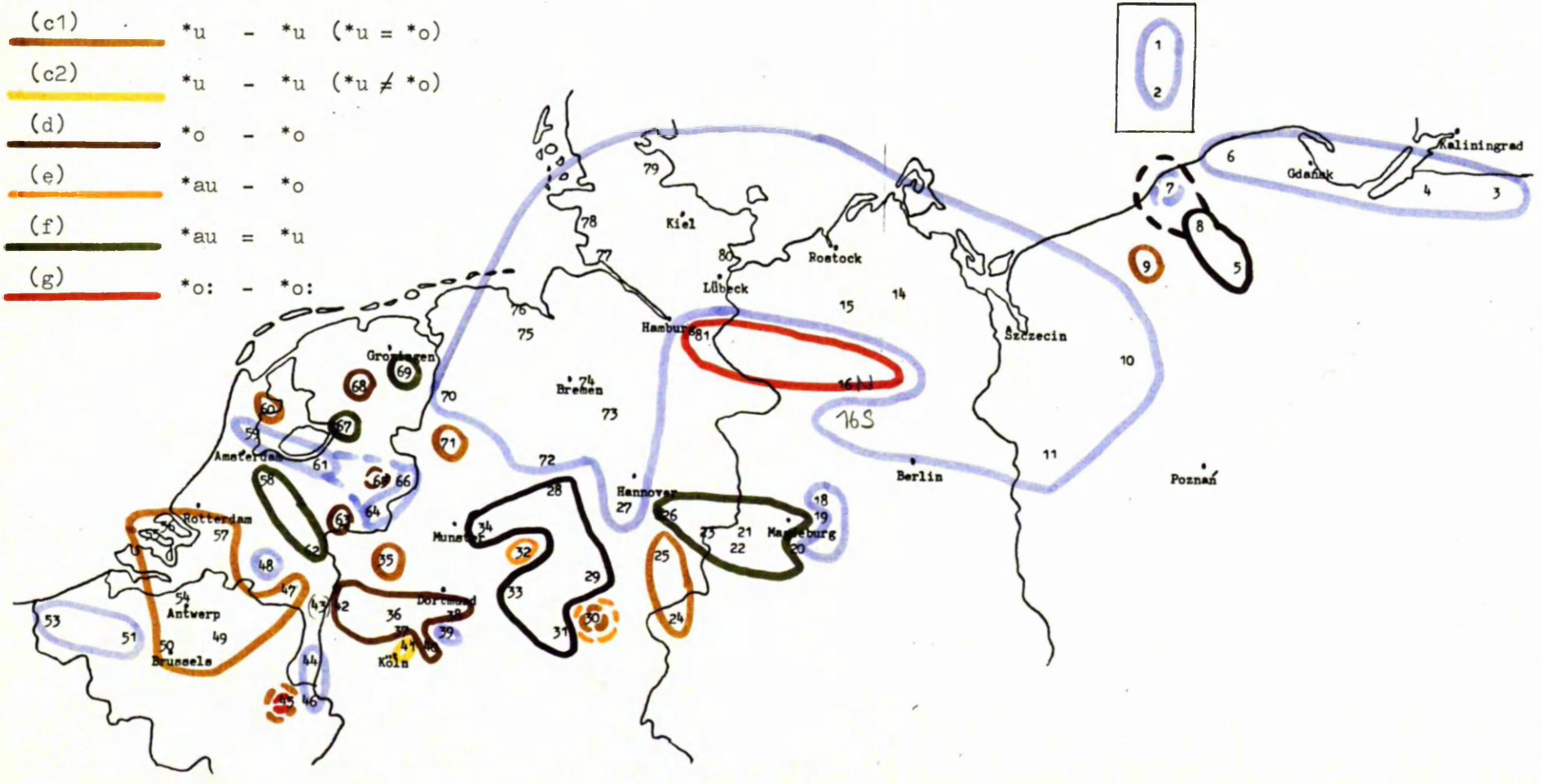
(c2) *u - *u (*u ≠ *o)

(d) *o - *o

(e) *au - *o

(f) *au = *u

(g) *o: - *o:



identical to that in class I: the alternant of the 2nd singular and plural preterite is "reinforced" by the past participle (see also the discussion of type (d) below). There is just one dialect (41) where the reflexes of Pre-OS *u and *o have not merged. However, in this dialect, the reflex Pre-OS *u *has* merged with Pre-OS *oi, and interparadigmatic analogy, involving class VI (which has *oi throughout the preterite), may have come into play. In no dialect, therefore, do we have to accept levelling in favour of the C alternant.

Types (d) and (e) do not correspond to anything in class I. In the former, the past participle alternant has been extended throughout the preterite; in the latter, to the C forms only.[42] It is notable that the number of dialects which show type (d) is fairly large. This has a bearing on our analysis of type (c) levelling. It was remarked above that type (c1) permits two alternative analyses: as the extension of the C alternant (like type (c2)) or as the extension of the D alternant (like type (d)). We might now argue in favour of the past participle as at least the primary influence in such cases, by weighing the large number of dialects which clearly show type (d) against the single dialect showing type (c2).

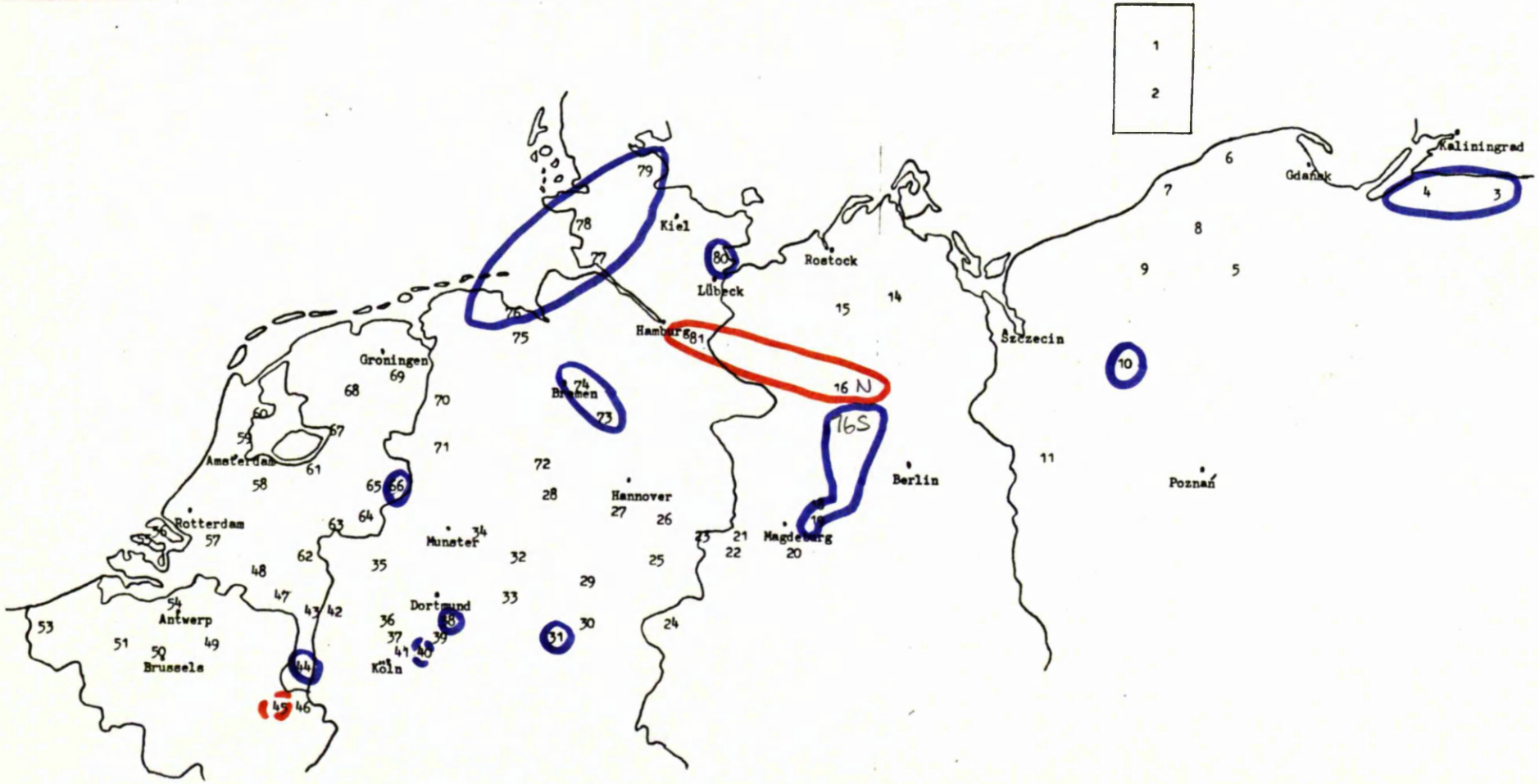
Type (f) involves the merger of *au and *u by phonological change. It corresponds exactly to type (d) of class I. It should be added that, in all of the dialects with the merger except 62, the past participle alternant *o has also merged with *au and *u.

The final set of alternants, (g), must involve interparadigmatic analogy, since nowhere in the class II paradigm would we expect the reflex of Pre-OS *oi. The influence of class VI is clearly at work here. It is interesting that in the areas adjoining the dialects concerned, *au and *oi have merged by sound change (see the map on p.72); these areas are located on the peripheries of the Low German territory, in the far North, South and East. As we showed on p.69, the merger of *au and *oi (in "*Oi") caused classes II and VI to become very close:

The merger of *au and *o: in relation to the spread of *o: throughout the preterite of class II

*au merged with *o:

*o: throughout class II preterite



	B	C
II	*O:	*u
VI	*O:	*O:

Indeed, the two classes have often become identical in the preterite in such dialects, because of levelling in favour of the B alternant in class II. It seems likely that this coming-together of classes II and VI spread from those areas where it arose by phonological change to neighbouring areas, where it involved interparadigmatic levelling. As we shall see in the discussion of class VI, in some other dialects adjoining the area where *au and *o: have merged, there has been a similar interaction between classes II and VI, but with the influence in the opposite direction.

We must now turn to the question of umlaut in the preterite indicative of class II. Three kinds of distribution can be distinguished: (i) no umlaut at all in the preterite indicative; (ii) umlaut in the C forms only (mainly East- and Westphalian dialects); and (iii) umlaut throughout the preterite indicative, in both B and C forms (mainly NLS dialects). The map on p.74 illustrates this distribution. We can then combine the information on this map with that on the map on p.70, to obtain the total number of distinct pairs of B and C alternants. For dialects with no umlaut in the preterite indicative, the alternants are, of course, simply those given by the map on p.70. For the other dialects, however, the picture is more complicated. Within (ii) above, there are two major structural types: there may have been no levelling or merger at all between B and C; or there may have been *some* levelling or merger between B and C, which has not however extended to umlaut (this area is shaded on the map). The sets of alternants falling into the former type are:[43]

	B	C	
(a)	*au	*u+uml	(5, 8, 28, 29, 31, 33, 34)
(e)	*au	*o+uml	(32)

The sets of alternants falling into the latter type are:

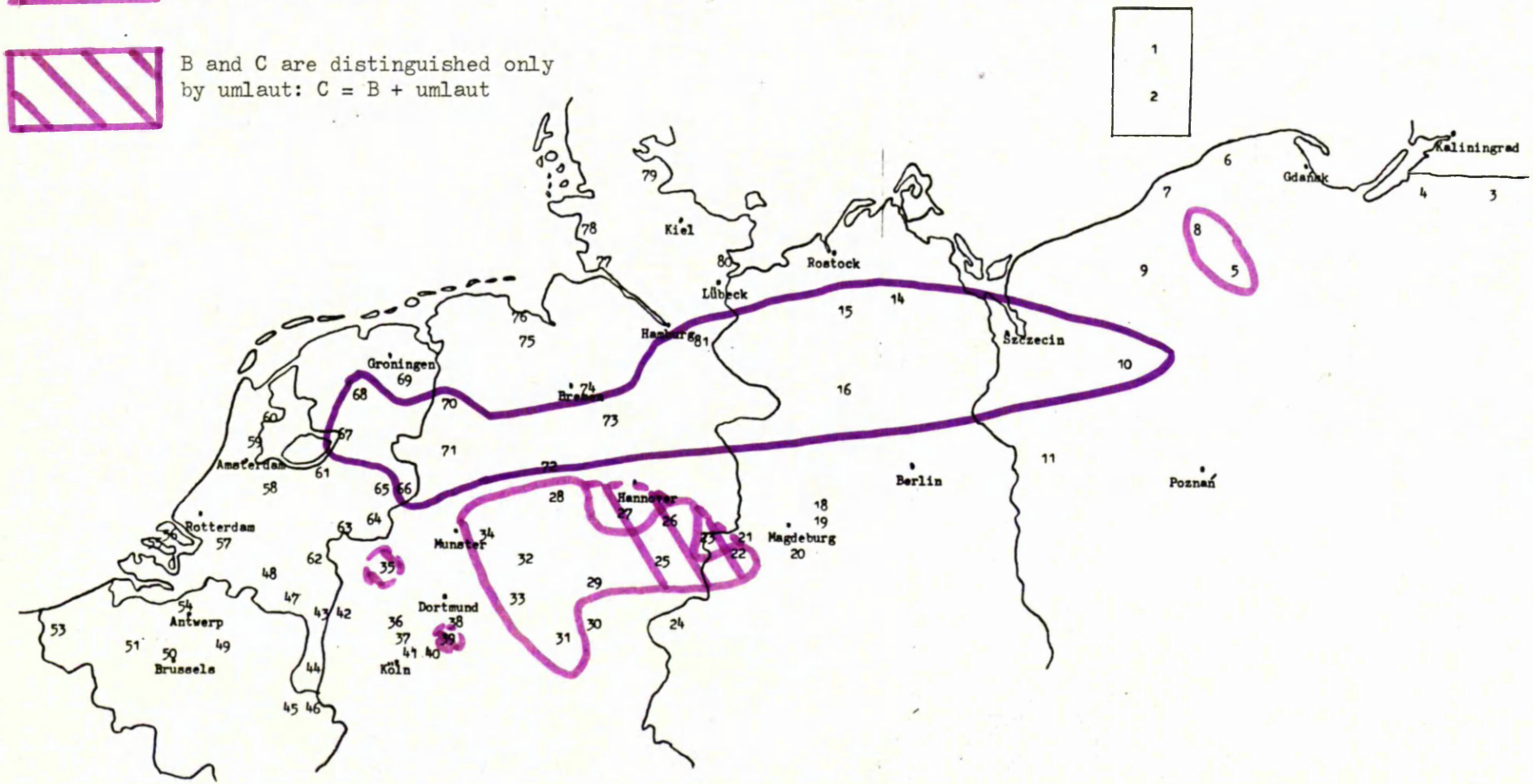
(b)	*au	*au+uml	(optional alongside *au - *au in

Class II - umlaut

umlaut in B and C (and B = C)

umlaut in C

B and C are distinguished only by umlaut: C = B + umlaut



27, 39)

(c1) *u (=*o) *u+uml (25; optional alongside *o - *o in 35)

(f) *au/*u *au/*u+uml (22, 26; optional alongside *au/*u - *au/*u in 23)

In these cases, the B and C alternant would be the same but for the fact that the latter has an umlauted vowel while the former does not. Types (c1) and (f) present no problems: (c1) can be analysed in terms of the extension of the (non-umlauted) past participle alternant to the B forms; and (f) does not involve any levelling between B and C, but only merger by sound change. With regard to dialect 23, where umlaut in the C forms is optional, note that Lange (1963) claims that the forms *with* umlaut are older than those without; in other words, the extension of umlaut to the C forms did take place, but more recently non-umlauted C forms have begun to appear. This also applies to the other strong verb classes where umlaut is relevant. Indications in the grammars of other Eastphalian dialects also point to the fact that umlaut in the C forms is receding in this area; Lange suggests that the influence of High German might be at work here.

Type (b) is rather more problematic, and the chronology of the development cannot be definitely established. There are two logical possibilities:

1)	or	2)
*au - *u		*au - *u
v v		v v
B/C levelling *au - *au		umlaut in C *au - *u+uml
v v		v v
umlaut in C *au - *au+uml		B/C levelling *au - *au+uml

Each stage of each of these alternative developments is attested in the modern dialects, and to that extent either of them is plausible. Note, however, that the second alternative relies on the plausibility of

partial levelling, and would seem to imply that the umlaut relationship had a degree of productivity at the time when levelling took place. There is little concrete evidence on which a decision between the two might be based. Behrens (1924) claims that there are signs of umlaut in the C forms from the 14th century. However, since in MLG the vowels o: and ǫ:, the reflexes of Pre-OS *au and *u/*o (in open syllables) respectively, are not generally distinguished in the orthography, we cannot tell whether levelling between B and C had occurred. There is evidence (Behrens 1924) that the appearance of umlaut in the C forms did predate levelling in the NLS dialects (where umlaut later spread throughout the preterite indicative; see below), but for the dialects in question here, there is no such evidence. It seems that we must accept at least the possibility of partial levelling, since it is the most likely development in the NLS dialects; moreover, there are clear-cut cases of this type of levelling in the development of the preterite subjunctive (see section 5.2). It is, however, in principle impossible to tell whether it has occurred in these West- and Eastphalian dialects.

Where umlaut has extended throughout the preterite ((iii) above), there has in each case also been levelling or merger between B and C, so that there is no vowel alternation at all within the preterite. The alternants are:

(b)	*au+uml	*au+uml	(10, 14, 16S, 66, 70, 72, 73)
(c)	*u+uml	*u+uml	(71)
(d)	*o+uml	*o+uml	(68)
(f)	*au/*u+uml	*au/*u+uml	(67)
(g)	*o:+uml	*o:+uml	(15, 16N, 81)

Historical evidence (Behrens 1924) indicates that umlaut first appeared in the C forms, before being extended to the B forms (that is, these dialects passed through a stage in which they resembled the East- and Westphalian dialects described above).[44] Apart from this, the relative chronology of the developments giving rise to types (b), (c) and (d) is not immediately apparent. For type (b), there are three logical

possibilities:

1)	2)	3)
*au - *u	*au - *u	*au - *u
v v	v v	v v
B/C levelling *au - *au	umlaut in C *au - *u+uml	umlaut in C *au - *u+uml
v v	v v	v v
umlaut in C *au - *au+uml	B/C levelling *au - *au+uml	umlaut in B *au+uml - *u+uml
v v	v v	v v
umlaut in B *au+uml - *au+uml	umlaut in B *au+uml - *au+uml	B/C levelling *au+uml - *au+uml

There are corresponding possibilities for type (d), where the past participle vowel has been extended to both the B and the C forms; note, incidentally, that in the dialect concerned (68) the past participle now also shows an umlauted vowel, of analogical origin (see section 4.5.2). For type (c), there is in addition a fourth possibility:

4)

*au - *u

v
v

umlaut in C
*au - *u-uml

v
v

umlaut in B and
B/C levelling together
*u+uml - *u+uml

Note that although this looks like a clear case of levelling from the plural and 2nd singular to the 1st/3rd singular, the subjunctive vowel may also have played a part.

The questions now arise, whether any of these three/four sequences seems, a priori, more likely to have occurred than another, and whether there is any concrete evidence favouring one sequence over another. We may observe that sequence 3) seems rather unlikely, since

the third stage:

*au+uml - *u+uml

is not attested in any dialect. The other sequences are all attested at each stage in the modern dialects. However, for the NLS dialects, at least, there is concrete evidence favouring one of the sequences. In the dialects concerned, the direction of levelling is from B to C; 4) is therefore excluded, leaving a choice between 1) and 2) (rather as in the dialects with umlaut in the C forms only). Baetke (1917) prefers 1), but Behrens (1924) disagrees, and adduces evidence in support of 2). He shows, firstly, that the first signs of umlaut in the C forms are found in the 14th century. He then adds that there is no reason to suspect any levelling between B and C before this period; and he goes on to back this up with evidence of unlevelled class II preterite plural forms in 16th century texts.[45] We must therefore admit as a possible development sequence 2), which involves partial levelling, and implies that the umlaut relationship had a degree of productivity. This may not, however, be correct for all dialects; sequence 4), in particular, would seem to be highly plausible for cases of type (c).

Class III(a) (/_ N(C)) As in class II, we shall begin by discussing the alternants without reference to umlaut (see the map on p.79):

		B	C	(D)
Pre-OS		*a	*u	(*u)
Modern dialects	(a)	*a	*u	
	(b)	*a	*a	
	(c)	*u	*u	

In most dialects, the process of levelling which began in MLG and MDu has been carried to completion. Unlike in classes I and II, levelling has been almost always in the same direction: from the plural and 2nd singular, reinforced by the past participle, to the 1st/3rd singular preterite. Only in one dialect, 51, is there evidence of levelling in

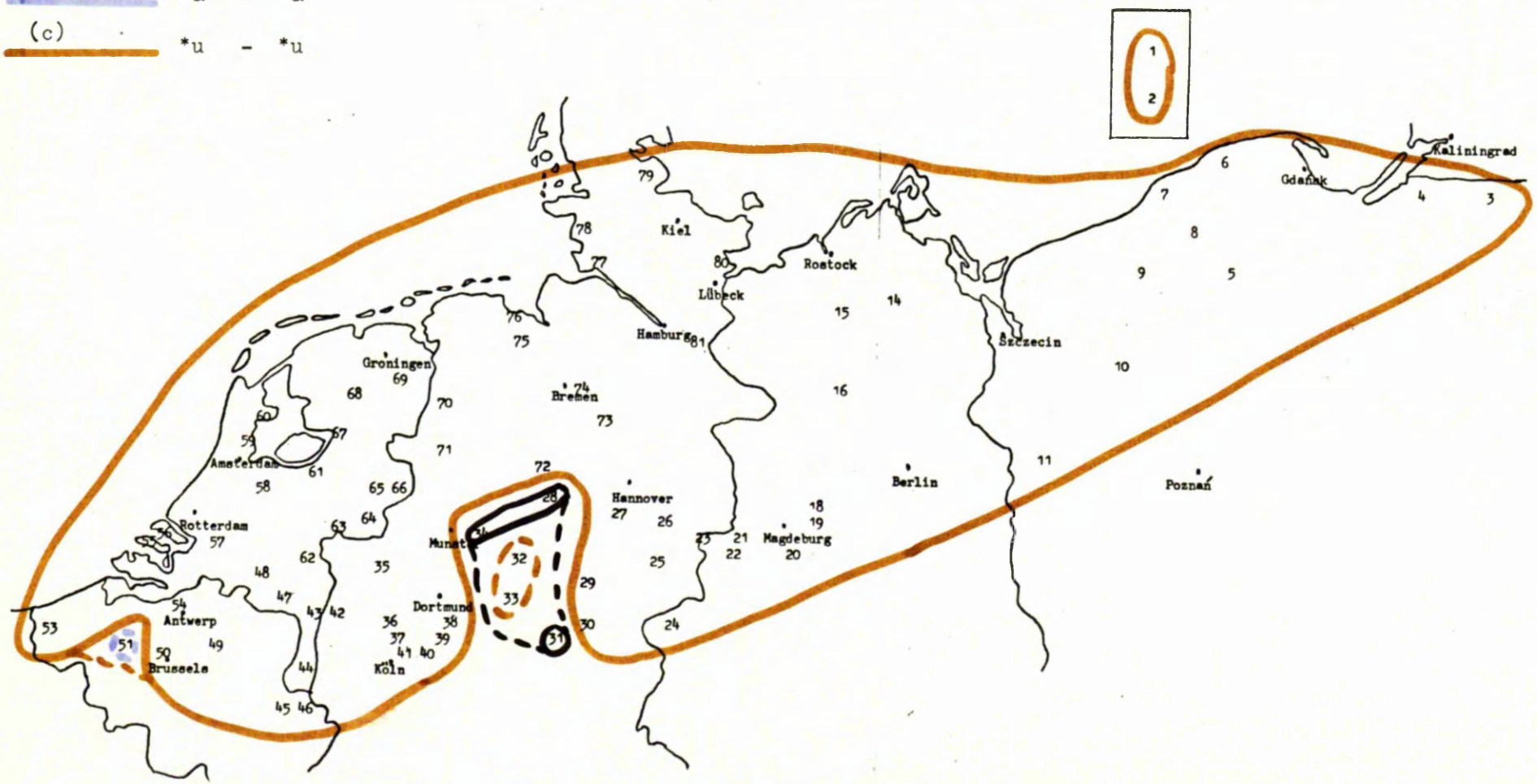
B - C

(a) *a - *u

(b) *a - *a

(c) *u - *u

Class III(a)



favour of the B alternant, and even here the forms in *a are optional, and seem to be relics.[46]

The characteristics of the root structure of this class need to be elaborated. The environment given above is /_ N(C); originally it was always a nasal cluster or geminate. Geminates have now been simplified, and the cluster ng has become a single velar nasal segment. In some dialects, the cluster nd has also been simplified to n. Nevertheless, this class still has a distinctive root structure in most dialects: not only does the root end in either a nasal consonant or a nasal cluster, but the root vowel is short throughout the paradigm (at the time when lengthening in open syllables took place, all the syllables were closed by clusters or geminates). Exceptions to this are some Rhineland dialects, where vowels have been diphthongised before the cluster nd (which remains in these dialects); and dialect 66, where vowel lengthening has occurred before clusters of nasal plus homorganic voicelesss plosive.

Verbs with a root-final m(C) behave differently from other verbs in N(C) in some areas. In the Westphalian dialects 27, 32, 34 and 39, and in the dialects 65, 66 and 80, they behave like the verbs in root-final l(C) (class III(b1); see below).

The occurence of umlaut in the preterite indicative of class III(a) is illustrated on the map on p.81. As in class II, we can divide the dialects into three groups according to the extent of umlaut in the preterite indicative: (i) no umlaut; (ii) umlaut in the C forms only; and (iii) umlaut throughout the preterite indicative. In the area with no umlaut, the alternants are simply given by the map on p.79. Within area (ii), there are two major types of structure. In dialects 28, 31 and 34, there has been no levelling between B and C:

	B	C	
(a)	*a	*u+uml	(optional alongside *a - *u in 28)

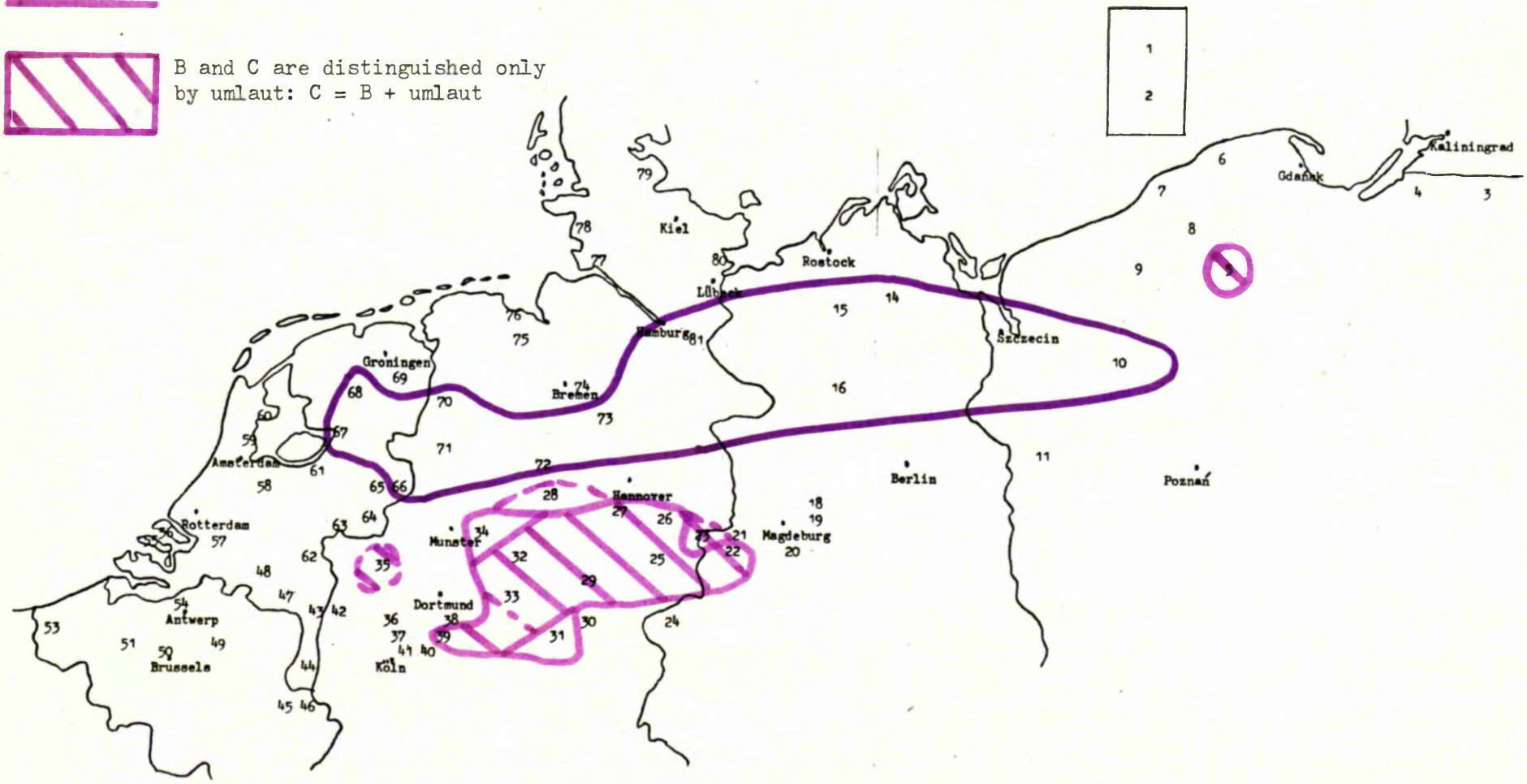
In dialects 5, 22, 23, 25, 26, 27, 29, 35 and 39, on the other hand, there has been levelling in favour of the C alternant, and the B and C forms are distinguished only by the fact that the latter has umlaut:

Class III(a) - umlaut

umlaut in B and C (and B = C)

umlaut in C

B and C are distinguished only by umlaut: C = B + umlaut



(c) *u *u+uml (optional alongside *u - *u in 23, 25)

This development does not pose any problems: it can be analsyed in terms of the extension of the non-umlauted past participle alternant, *u, to the B forms.

The dialects with umlaut in both B and C all show levelling between B and C (in favour of the C alternant); there is therefore no alternation within the preterite indicative:

(c) *u+uml *u+uml (10, 14, 15, 16, 66, 67, 68, 70, 71, 72, 73, 81)

As we mentioned for class II, umlaut appeared in the C forms first of all (Behrens 1924). The extension of umlaut to the B forms might seem, therefore, to be a clear-cut case of levelling from the plural and 2nd singular to the 1st/3rd singular preterite. Since, however, umlaut originated in the preterite subjunctive, the levelling can also be analysed in terms of the influence of the subjunctive on the indicative (or even, in some dialects, the wholesale replacement of indicative by subjunctive forms; see section 5.2). As for the order of B/C levelling, the appearance of umlaut in the C forms, and the extension of umlaut to the B forms, the same (four) possibilities and comments apply as in class II.

Class III(b1) (/_ l(C)) Without taking umlaut into account, the alternants are:

		B	C	(D)
Pre-OS		*a	*u	(*o)
Modern dialects	(a)	*a	*u	
	(b)	*u	*u	
	(c)	*o	*o	
	(d)	*o	*u	
	(e)	*e:	*e:	

The distribution of these alternants is illustrated in the map on p.83. There are no cases of the extension of the B alternant, *a, in this class. A considerable number of dialects show type (c), in which the

B - C

Class III(b1)

(a) *a - *u

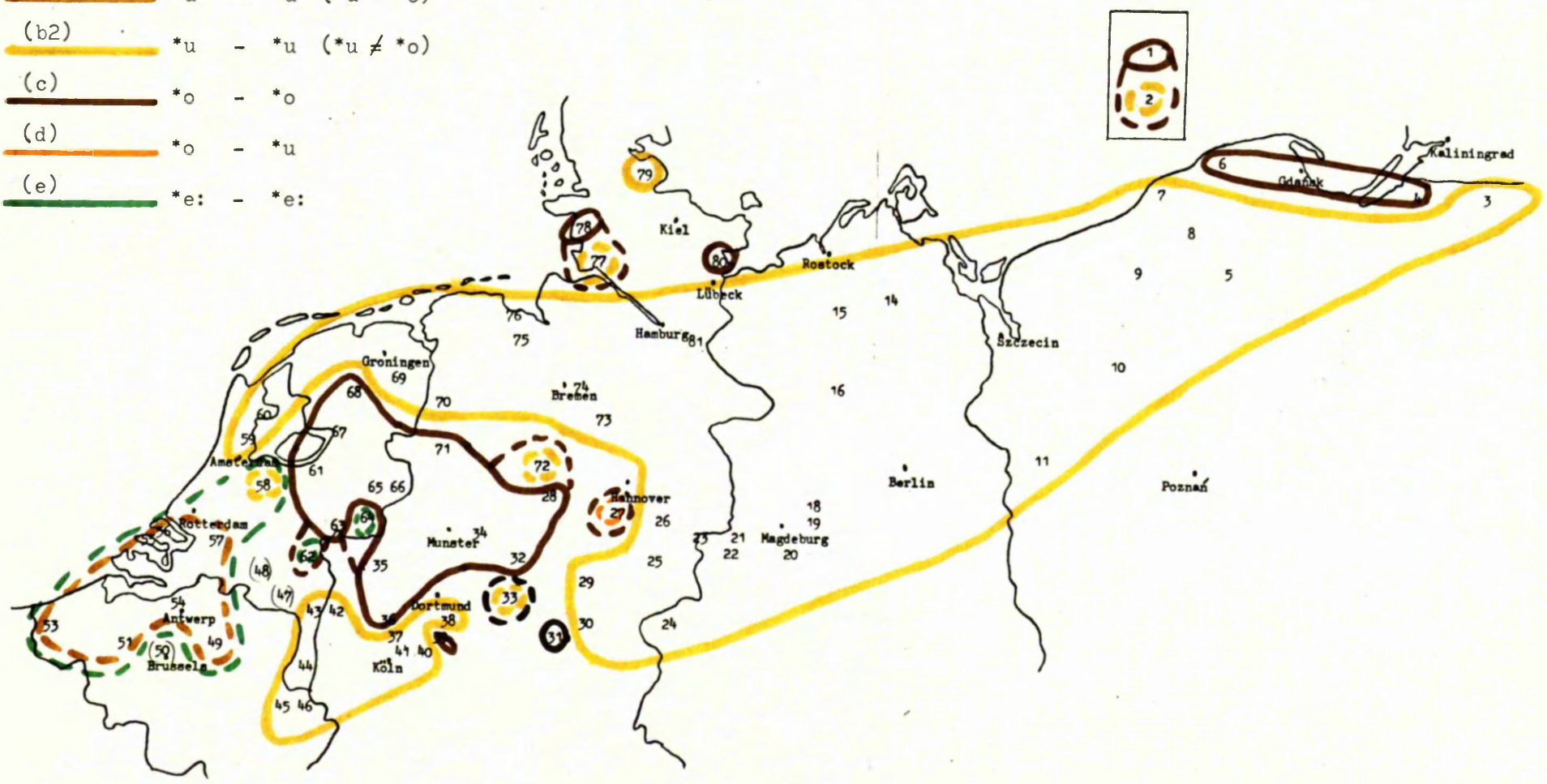
(b1) *u - *u (*u = *o)

(b2) *u - *u (*u ≠ *o)

(c) *o - *o

(d) *o - *u

(e) *e: - *e:



past participle alternant, *o, has been extended throughout the preterite. The overwhelming majority of dialects, however, show alternants of type (b). At first sight, it appears that this type has arisen by the extension of the C alternant, *u ; but this impression is somewhat misleading, for two reasons. Firstly, in some southern Dutch and Flemish dialects (shown separately on the map, as (b1)), the reflexes of *u and *o have merged by sound change, so that this type of levelling can alternatively be analysed as the extension of the D alternant throughout the preterite, as in type (d). Secondly, even where *u and *o have not merged, dialects with type (b) alternants often show the alternant *u in the past participle (see section 4.5.2 for the origin of this vowel in the past participle), so that here too it is possible to analyse this development as the extension of the past participle alternant. Even where neither of these two conditions holds, the possible influence of class III(a), which contains many more verbs, must be taken into account. It will be recalled that most dialects show the alternants *u - *u in III(a), and that the past participle alternant of III(a) is always *u.

In dialect 27, the alternation *o - *u occurs. The B forms have adopted the alternant of the past participle, but the C alternant has remained unchanged. The data from the grammar of dialect 27 may, however, be unreliable.

The occurrence of *eː in the preterite in the southern Dutch and Flemish dialects is restricted to the verb HELP in this class (though it is also found in class III(b2)). This development began in MDu, and was discussed earlier. It is evident that the influence of class VII is responsible, and that it was favoured in verbs with a root-final cluster. The importance of the segments following the root vowel, and the lack of a shared alternant between classes VII and III, suggest an account in terms of a "schema" for prototypical preterite forms (cf. Bybee and Slobin (1982)). The question why this development was restricted to the verb HELP must remain open; but since class III(b1) contains only a handful of verbs, such as arbitrary restriction is not

too surprising.

As in class III(a), the characteristics of the root-final segment(s) are no longer as coherent as in MLG: geminates have been simplified, and the cluster ld has frequently been simplified to l. In some Rhineland and Westphalian dialects, ld has been retained, but the typical short root vowel of class III has been diphthongised before this cluster (cf. the parallel development before nd in class III(a)). In dialect 46, the preterite vowel has undergone diphthongisation and the following l has been lost before p and k: ulp > oup (giving rise to preterite forms such as houp).

The distribution of umlaut in class III(b1) is shown on the map on p.86. It is very similar to that in class III(a), and does not require extra comment. With umlaut in the C forms only, and no levelling between B and C, the following pairs of alternants occur:

	B	C	
(a)	*a	*u+uml	(31; optional alongside *u - *u+uml in 33)
(d)	*o	*u+uml	(some parts of 27)

With umlaut in C only, but levelling between B and C (or between B, C and D):

(b)	*u	*u+uml	(22, 25, 26, 29; optional alongside *u - *u in 23; optional alongside *a - *u+uml in 33)
(c)	*o	*o+uml	(28, 32, 34, 39; some areas of 27; optional alongside *o - *o in 35)

With umlaut in both B and C and, as always, levelling between B and C (or between B, C and D):

(b)	*u+uml	*u+uml	(15, 16, 70, 73; optional alongside *o+uml - *o+uml in 72)
(c)	*o+uml	*o+uml	(66, 67, 68, 71; optional alongside *u+uml - *u+uml in 72)

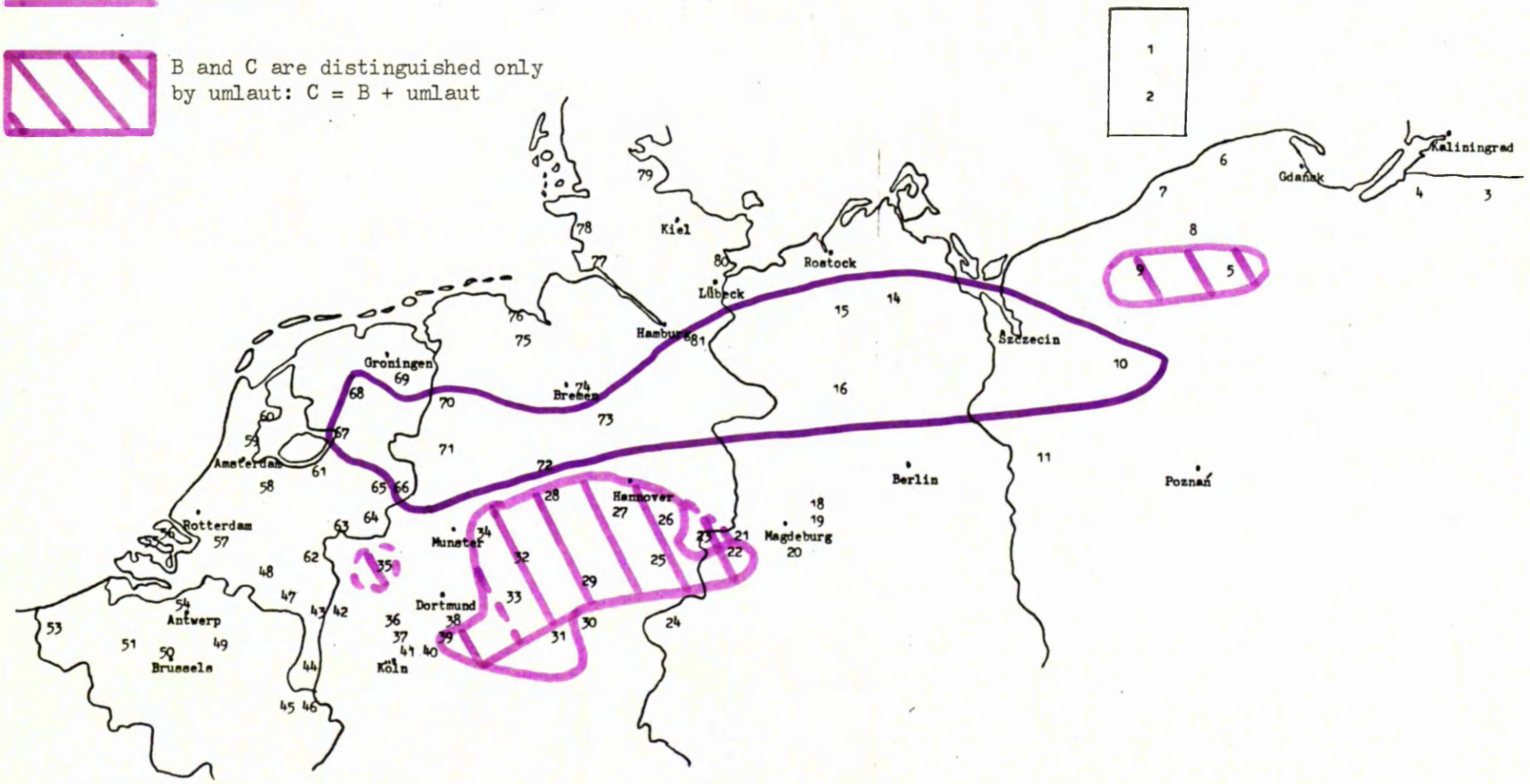
Class III(b2) (/_ rC(C)) The distribution of alternants (neglecting umlaut) is illustrated on the map on p.87. The alternants are:

Class III(b1) - umlaut

umlaut in B and C

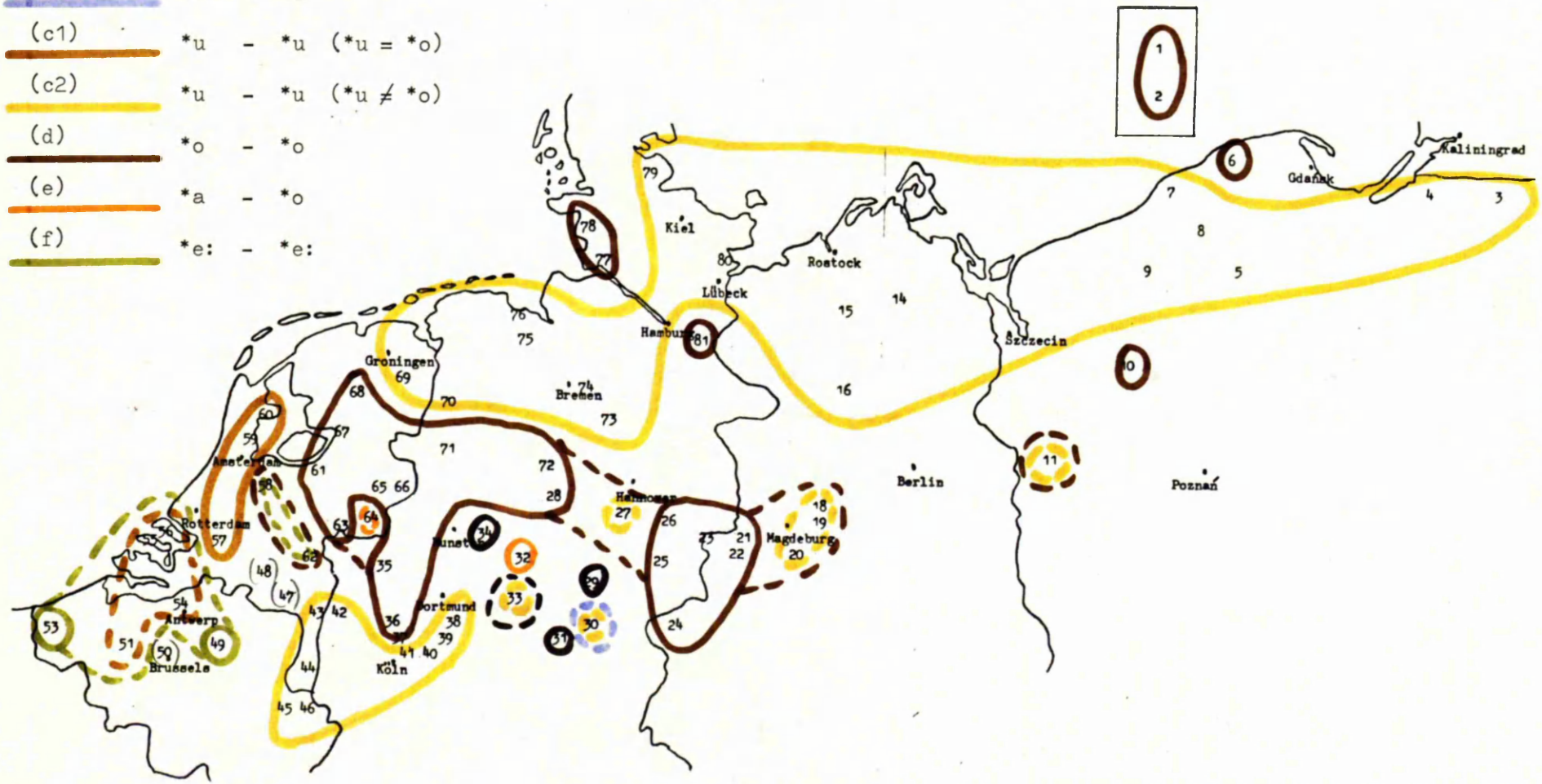
umlaut in C

B and C are distinguished only by umlaut: C = B + umlaut



Class III(b2)

	B	-	C	
(a)	*a	-	*u	
(b)	*a	-	*a	
(c1)	*u	-	*u	(*u = *o)
(c2)	*u	-	*u	(*u ≠ *o)
(d)	*o	-	*o	
(e)	*a	-	*o	
(f)	*e:	-	*e:	



		B	C	(D)
Pre-OS		*a	*u	(*o)
Modern dialects	(a)	*a	*u	
	(b)	*a	*a	
	(c)	*u	*u	
	(d)	*o	*o	
	(e)	*a	*o	
	(f)	*e:	*e:	

There is just one instance of the extension of the B alternant, *a, to the C forms (dialect 30), and that occurs only optionally, alongside levelling in the opposite direction.

We have assumed in drawing the map that where a dialect actually shows the vowel o in the preterite, this does in fact represent the reflex of Pre-OS *o, and is therefore of analogical origin, from the past participle. In other words, we have assumed that o has not arisen by sound change, from Pre-OS *u before rC (as in MLG). It is not always evident from the dialect grammars whether or not this sound change has taken place; the situation is complicated further by the fact that the grammars sometimes take MLG as their starting point, and consequently postulate rather unlikely sequences of changes. Our assumption that the sound change has not taken place may therefore be incorrect in some cases; this would mean that some of the dialects which we have allocated to type (d) should in fact be included in type (c). However, the geographical distribution of o in the preterite is suggestive rather of independent analogical developments than of the diffusion of a sound change.

The preterite vowel *e:, from class VII, is characteristic of the southern Dutch and Flemish dialects. It began to appear in MDu, and has already been discussed with reference to both MDu and to the class III(b1) verb HELP. Although the spread of *e: seems to be related to the presence of a root-final consonant cluster, it is perhaps surprising that it is especially verbs in rC that show *e:, since no class VII verbs have this particular root-final cluster. Pauwels (1958), in his

grammar of dialect 49 (Aarschot), claims that this phenomenon is due less to the positive influence of class VII than to the merger of the preterite and present tense vowels in class III(b2), as a result of changes in environment of rC. The class VII preterite vowel was, he claims, then introduced merely as a means of distinguishing the present tense form the preterite. This account is not, however, totally convincing. Firstly, *e: appeared in the preterite of these verbs in MDu, but there is no evidence at this stage of sound changes which would have led to a merger between the present and preterite vowels. Secondly, it does not take into account the fact that class VI verbs with a root-final cluster, such as WAHS, also tend to develop *e: in the preterite in other dialects (these verbs have become weak in dialect 49). Finally, it does not explain why the class VII preterite vowel, in particular, was chosen; in order to maintain the distinction between the present and the preterite, the verbs could, for example, have developed a weak preterite, like many other originally strong verbs in dialect 49, including the class VI verbs mentioned above.

In some dialects, class III(b2) verbs have developed a long vowel before the cluster rC. The dialects which show this development are mainly Westphalian and NLS. This has reduced the coherence of class III as a whole, which typically contains verbs with a short root vowel throughout the paradigm. The verb WERTH has developed long vowels in even more dialects: the cluster rd (< *rth) has conditioned lengthening to a greater extent than other rC clusters. This verb differs from other class III(b2) verbs in other respects also. In some Westphalian dialects where lengthening has taken place in *all* class III(b2) verbs, WERTH nevertheless has a different preterite vowel from other verbs. Two factors may account for the unusual behaviour of this verb here: firstly, the root-final cluster rd has a tendency to be simplified to r (cf. nd > n, ld > l), so that this is the only class III)b2) verb without a root-final cluster; and secondly, we may hypothsesise that the high frequency of WERTH ("become"; also used as a future and passive auxiliary) has set it apart from the other verbs of its class.

In the Dutch and Flemish dialects, WERTH is more likely to have *ei in the preterite than other verbs of its class: in some dialects, it is the only III(b2) verb with *ei; in others, *ei is optional in other III(b2) verbs but obligatory in WERTH. This may be due to the fact that the fronting of *u/*o before rC (which will be discussed below) only took place when the C was labial or velar, and therefore would not have applied in the verb WERTH. This verb would consequently have been isolated within class III(b2), and may have been more prone to influences from other classes on that account.

Class III contains, as well as verbs with root-final N(C) or L(C), some verbs where the root vowel is preceded by a liquid, and followed by a cluster, such as FLEHT, TREKK; the verb FEHT (originally from class V) also joined this class in OS, presumably on account of its similarity to the verb FLEHT (Holthausen 1922). Because these verbs end in a cluster, they have retained a short root vowel throughout the paradigm, and therefore still share one of the characteristic features of class III. In most modern dialects, these verbs follow the pattern of class III(b2). The following exceptions may be noted: (i) in those Westphalian and NLS dialects where verbs in rC have lengthened the root vowel, verbs such as FLEHT follow class III(b1); (ii) they similarly follow class III(b1) in dialect 54, where fronting has occurred before rC (see below); (iii) in dialects 41 and 44 they are isolated, in that they show *o in the preterite whereas the rest of class III shows *u ; and (iv) in dialect 51, they retain an optional *a in the B forms, like class III(a).

The distribution of umlaut in III(b1) is illustrated on the map on p.91. In the dialects surrounded by purple isoglosses, the situation resembles that in III(a) and (b1), and the same comments apply. With umlaut in C only, and no levelling between B and C, we find the following pairs of alternants:

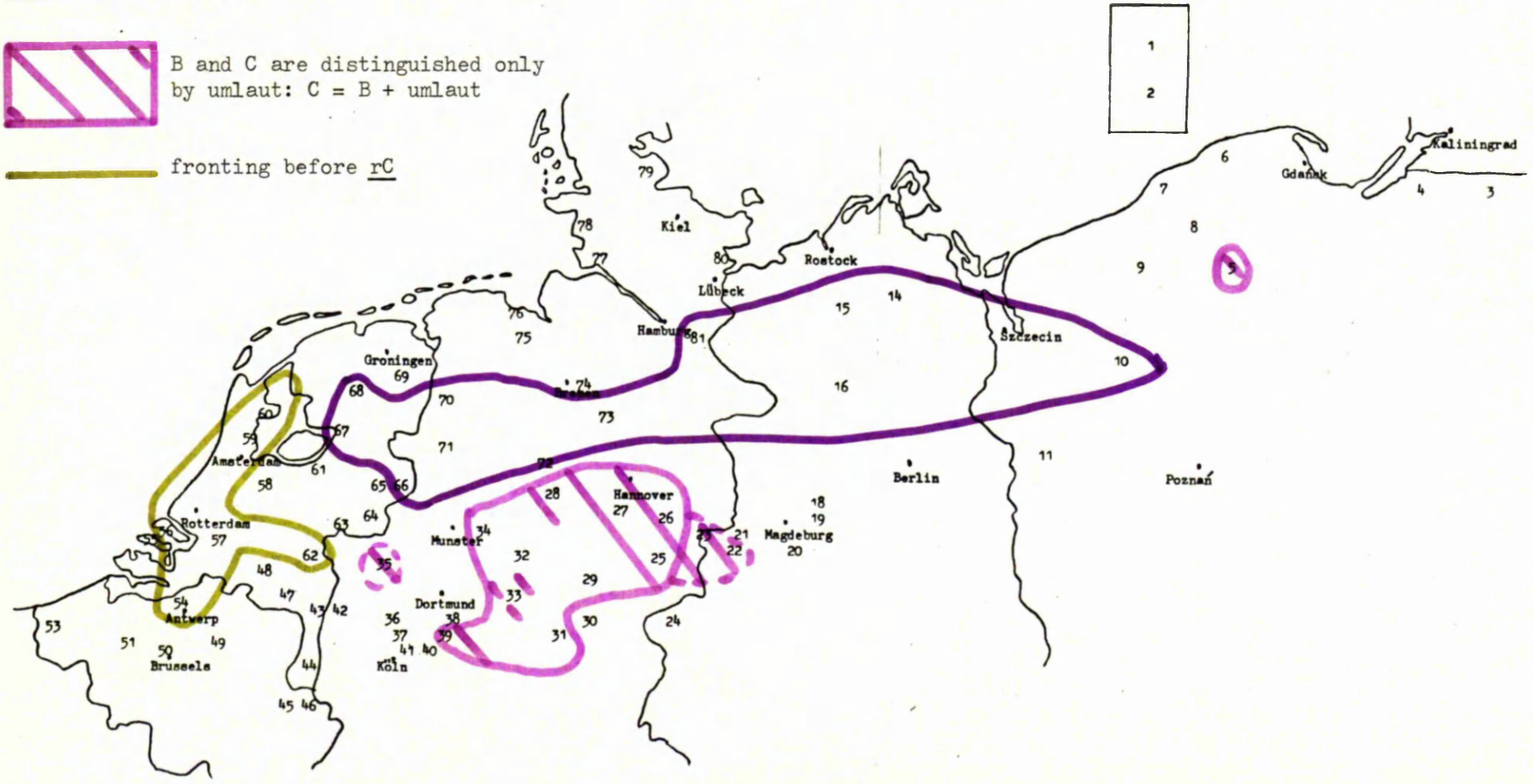
Class III(b2) - umlaut

umlaut in B and C (and B = C)

umlaut in C

B and C are distinguished only by umlaut: C = B + umlaut

fronting before rC



	B	C	
(a)	*a	*u+uml	(28, 31, 34; optional alongside *u - *u+uml in 33)
(e)	*a	*o+uml	(32)

With umlaut in C only, but levelling between B and C (or between B, C and D):

(c)	*u	*u+uml	(5, 39; optional alongside *o - *o+uml in 27; optional alongside *a - *u+uml in 33)
(d)	*o	*o+uml	(22, 23, 25, 26, 28; optional alongside *u - *u+uml in 27; optional alongside *o - *o in 22, 23, 25)

With umlaut in both B and C, and as always levelling between B and C (or between B, C and D):

(c)	*u+uml	*u+uml	(14, 15, 16, 70, 73; optional alongside *u - *u in 69)
(d)	*o+uml	*o+uml	(10, 66, 67, 68, 71, 72, 81)

The only point of interest here is the optional presence of umlaut in the preterite of these verbs in dialect 69, which does not generally show umlauted preterite forms (but see class VI). This is an extension of the phenomenon which is more widespread in the strong verb system in the dialects to the south of 69. It does not appear to be related to the fronting before rC found to the West (see below).[47]

The area surrounded by a green isogloss on the map, consisting of Dutch and Flemish dialects, appears to have *u/*o+umlaut in the preterite (and the past participle) of this class (alongside *ei in some of the dialects). However, this is a completely different phenomenon from "true" umlaut, and has not arisen by analogy with the preterite subjunctive. It is rather the result of a more recent sound change: the fronting of *u/*o before clusters of r plus a velar or labial consonant.

Classes IV and V We shall consider classes IV and V together, because they originally had the same alternants in the preterite; they differed only in the past participle alternant. The two classes taken together can, however, be divided into two sub-classes, according to the preterite vowels in the modern dialects: (1) in which a reflex of at least one of the Pre-OS preterite alternants is preserved in some guise (disregarding umlaut and vowel length); and (2) in which the Pre-OS alternants have been replaced by other vowels (generally "o-type" vowels). These two sub-classes are discussed separately below.

The distribution of verbs between these two sub-classes seems to rest partly on an historical basis (class IV versus class V), and partly on a more recent division of verbs. In the main, class V verbs retain reflexes of the Pre-OS alternants, and can therefore be assigned to sub-class (1); only in a few Westphalian and Rhineland dialects have several class V verbs adopted preterite vowels which can be classed under (2). The one widespread exception to this generalisation is the verb WEG, which frequently shows type (2) alternants. There are, however, clear signs that this verb has in fact been assimilated to class IV in many areas: it has acquired the characteristic past participle vowel of class IV, the reflex of Pre-OS *o (the first signs of this development can be seen in MLG).

Many class IV verbs, on the other hand, have replaced the Pre-OS preterite alternants, and hence belong to sub-class (2). The distinctive past participle vowel, *o, of class IV seems to be an important factor in these developments in the preterite: in some dialects, this *o has itself been extended to the preterite; in other dialects, the fact that class II shares this same past participle vowel may have given rise to the influence of class II on class IV in the preterite.

The actual membership of sub-class (2) varies from dialect to dialect; but it emerges that not all class IV verbs are equally likely to adopt the new alternants. In a large number of dialects, KUM and (slightly less frequently) NEM are the only class IV verbs which retain

the type (1) conjugation, while the other class IV verbs have adopted the new preterite forms; and wherever KUM and NEM have adopted the new alternants, the other class IV verbs have also done so. In other words, the modification of KUM and NEM implies the modification of the rest of class IV. The retention of the Pre-OS alternants in these particular verbs, in areas as far apart as Belgium and Prussia, can hardly be ascribed to inter-dialectal influence; nor can it be a relic of an older stage of common development, since the emergence of sub-class (2) is itself a fairly recent, post-MLG, innovation. This assessment is reinforced by the fact that the development of sub-class (2) itself is not a unified phenomenon: different areas show the reflexes of different Pre-OS vowels in the preterite of this group of verbs (though we shall see later that the majority of verbs agree, on a more abstract level, in having modelled these changes on class II). The actual preterite vowels of the modern dialects also differ, despite the fact that they are generally "o-type" vowels. We can therefore conclude that we are dealing with separate, independent, though similar, developments in different areas. Consequently, we can also assume that the common failure of the verbs KUM and NEM to follow these developments is a series of independent "failures" in different areas (though not necessarily in each individual dialect).

The question then arises, why these two verbs have often failed to adopt the new types of conjugation. In the case of KUM, its unusual present-tense vowel, unique within class IV, and in many dialects even within the whole strong verb system, may have been a factor causing this verb to behave differently. This argument cannot, however, be applied to NEM. One fact connecting KUM and NEM is that they are the only verbs in class IV with a root-final nasal. It is, therefore, perhaps natural that they should share the same fate; but this does not explain why, in particular, they have tended not to adopt new forms. It is interesting to note, in this connection, that there are other, quite unrelated, instances of resistance to analogical change involving these same two verbs (see chapter 5, section 1). One factor that may account for their

behaviour is their high frequency of use (cf. their very basic meanings, "come" and "take" respectively). We may hypothesise that very frequently used verbs tend to retain more "archaic" forms, and to resist analogical changes affecting other verbs of their class.

Class IV/V (1) The map on p.96 illustrates the distribution of the pairs of alternants (neglecting umlaut, to begin with). The following pairs occur:

		B	C	(D)
Pre-OS		*a	*a:	(IV: *o, V: *e)
Modern dialects	(a1)	*a	*a:	
	(a2)	*a	*e:/*eo	
	(b)	*a	*a	
	(c1)	*a:	*a:	
	(c2)	*a:	*e:/*eo	
	(c3)	*e:/*eo	*e:/*eo	
	(d)	*a	*a˜	(*a˜ is the reflex of Pre-OS *a lengthened in open syllables)
	(e)	*a˜	*a˜	
	(f)	*a˜	*a:	

Pairs (a2), (c2) and (c3), containing *e:/*eo, will not be discussed immediately; it is more appropriate to deal with them alongside umlaut.

It is notable, with regard to pair (a1) with no levelling, that some Dutch/Flemish dialects (and, indeed, the Dutch standard language) retain an alternation between B and C in class IV/V(1) while having levelled it out in all the other strong verb classes. It may be significant that, because of the merger between *a: and *a˜ (that is, *a lengthened in open syllables) in these dialects, the B - C alternation in class IV/V(1) coincides with the alternation *a - *a˜ found elsewhere in the morphology, such as between the singular versus plural of some nouns.

The extension of the B alternant to the C forms (type (b)) is a fairly common development in this class, and seems to have taken place independently in different areas. Note that (in contrast with type (d))

B - C

Class IV/V(1)

(a1) *a - *a:

(a2) *a - *e:

(b) *a - *a

(c1) *a: - *a:

(c2) *a: - *e:

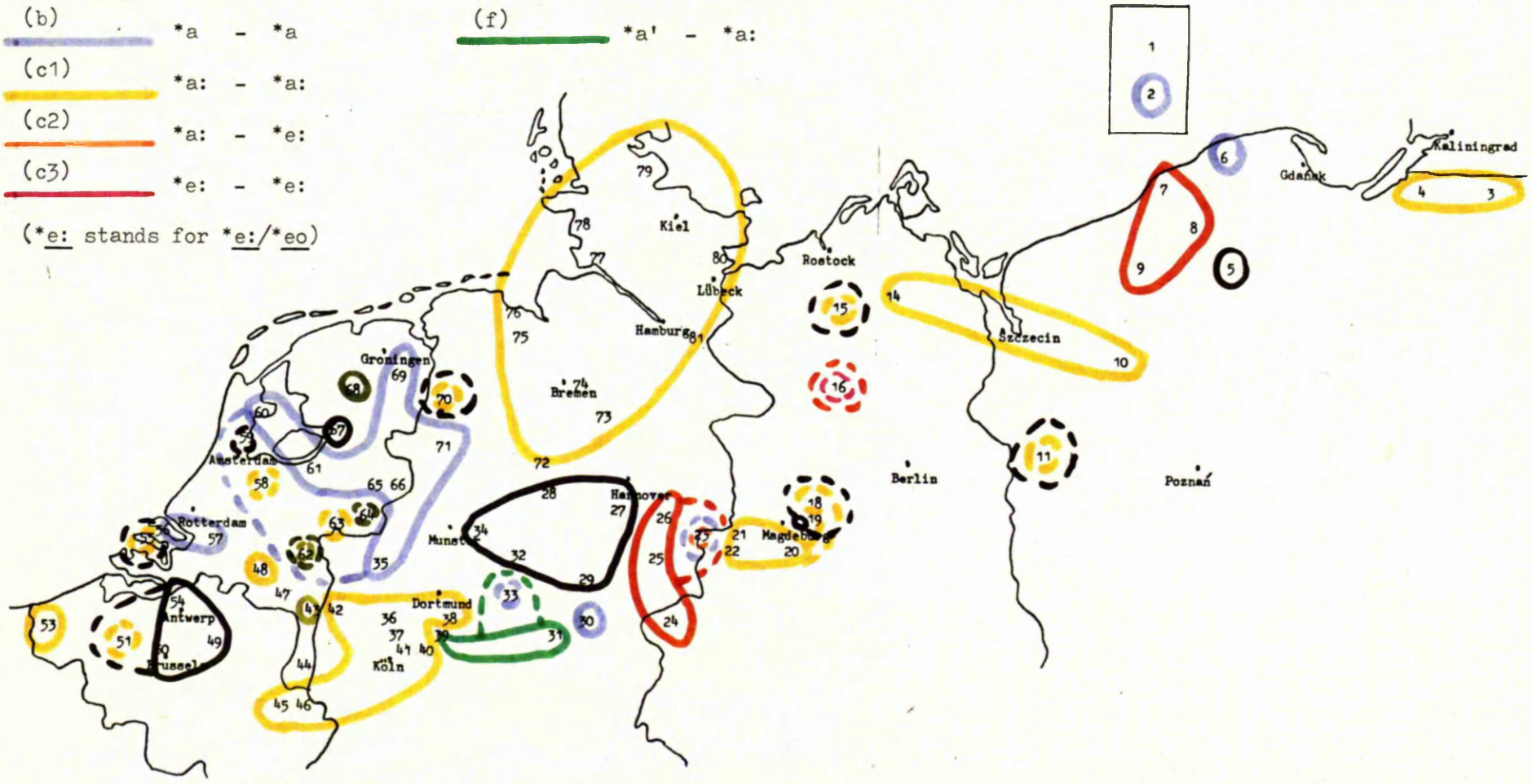
(c3) *e: - *e:

(d) *a - *a'

(e) *a' - *a'

(f) *a' - *a:

(*e: stands for *e:/*eo)



the vowel found in the C forms is that reflex of *a which we would expect in a *closed* syllable (as in the B forms), even though it is situated in an open syllable. This probably means that the B alternant was not extended to the C forms until after the lengthening of vowels in open syllables; though it is also possible that the extension took place earlier, and that the alternation in length which then arose was subsequently levelled out.

Levelling in favour of the C alternant is also quite widespread. In some dialects with this type of levelling (and where the C forms do not show an umlauted vowel; see below), the C alternant would have been reinforced in class IV by the past participle alternant, because of the merger of Pre-OS *a: with *o, lengthened in open syllables. The dialects in question are: 18, parts of 19 and 20, 37, 38, 41, 42, 45, 46 and 63. However, this reinforcement would have applied only in class IV verbs, and, as we discussed above, many of these verbs have adopted the new conjugation of sub-class (2). Moreover, even in the class IV verbs which remained in sub-class (1), there are complicating factors. Firstly, in dialects 18, 19, 20 and 63, Pre-OS *o has not been lengthened in an open syllable before m, and has therefore not merged with Pre-OS *a: in the verbs KUM and NEM. Secondly, in dialects 37, 38, 41 and 42, the verb KUM shows the reflex of Pre-OS *u rather than *o in the past participle, and therefore remains unaffected by the merger of Pre-OS *a: and *o. We can conclude that in IV/V(1) (unlike class II, for example) the past participle plays a very minor role in the extension of the C alternant to the B forms.

It therefore appears as though this class contains many cases where the 2nd singular and plural preterite have influenced the 1st/3rd singular. A closer investigation, however, reveals further factors to be at work. One of these factors is intraparadigmatic: in dialects where umlaut has spread from the preterite subjunctive to the preterite indicative (see below), the extension of *a:+umlaut from the C forms to the B forms may be due to, or at least reinforced by, the influence of the preterite subjunctive.

The other two factors involve interparadigmatic levelling. One of them applies to dialects where the C alternant has umlaut. This alternant, *a:+umlaut, has nearly always merged with Pre-OS *ai and/or *e:/*eo. In other words, it has merged with the B alternant of class I (which has frequently been extended throughout the preterite) and/or with the preterite vowel of class VII (which has always been common to both the B and the C forms). The extension of the C alternant of class IV/V(1) to the B forms may therefore have been prompted by analogy with other classes which have this same vowel throughout the preterite. This analysis is particularly plausible in view of the fact that in some Eastphalian and Eastern dialects, the C alternant of class IV/V(1) is the reflex not of *a:+umlaut but of *e:/*eo, which *must* have been introduced analogically from class VII (see the discussion of pairs (a2), (c2) and (c3) below).

The second argument applies to *all* of the dialects which have levelled in favour of the C alternant. Classes IV and V are unusual in originally having a short vowel, *a, in the B forms. The B alternants of all the other strong verb classes except class III are long vowels or diphthongs. Moreover, class III, which retains a short vowel throughout the paradigm, differs from classes IV and V in having a root-final consonant cluster.[48] Consequently, if we talk in terms of syllable rather than vowel length, classes IV and V are the only ones with a short syllable in the B forms. We may therefore hypothesise that the model of other classes would favour the long vowel of the C forms over the short vowel of the B forms. Of course, in some dialects the vowel of the B forms was extended throughout the preterite despite this interparadigmatic pressure. But we are simply concerned here to show that external pressures favouring the C alternant did exist.

It is interesting to note, with regard to this hypothesis, that in many dialects the extension of the C alternant is equivalent to the lengthening of the B alternant, *a (even though phonetically it also involves rounding in many dialects). Because the reflex of Pre-OS *a: has frequently merged with *a^ (that is, *a lengthened in an open

syllable), there is no vowel other than this reflex available as the long equivalent of *a. There are, furthermore, three dialects - 31, 33 and 39 - where we seem to have clear examples of quantitative levelling (pair (f)). Here *a: and *a^ have not merged:

*a: > ɔ:

*a^ > a:

and the B forms show the latter, which more closely represents a lengthening of *a (note that *a^ appears here in a closed syllable, where it must have arisen analogically). These cases, then, show the importance of vowel quantity, and strengthen the hypothesis outlined above. However, the whole issue of quantitative levelling is closely intertwined with umlaut - the three dialects concerned show umlaut in the C forms - and we shall return to it below.

There are two more pairs of alternants - (d) and (e) - which involve *a^ as distinct from *ai. The way in which *a^ has arisen here is, however, rather different. There are two possibilities for the development of pair (d). Firstly, this may be a simple instance of levelling in favour of the B alternant, *a, if this change preceded the lengthening of vowels in open syllables. In the C forms, unlike in the B forms, this *a would have been situated in an open syllable, and would therefore in due course have undergone lengthening. In other words, *a^ could have arisen by analogy followed by sound change. Alternatively, it could have arisen by purely analogical change: the isolated alternation *a - *a: may have been replaced by the alternation *a - *a^, which is found elsewhere in the morphology, such as between the singular and the plural of some nouns. We have already commented (p.95) on the relevance of these other areas of morphology to the B - C alternation in this class of verbs.

There does not seem to be any way of deciding between these two alternatives, firstly because the lengthening of vowels in open syllables took place before the written records of MDu began, and secondly because in the MDu orthography, at least, *ai and *a^ had merged, as indeed they have in most modern Dutch dialects. It is

therefore impossible to tell when the alternation *a - *a: was replaced by *a - *a~, and consequently the nature of the change(s) which led to the replacement.

The type (e) alternants, *a~ - *a~, have probably developed out of type (d), as a result of further levelling in favour of the C alternant. Note that the interparadigmatic factor of vowel length, discussed above with reference to pairs (c1) and (f), applies here also.

There are several dialects which show alternative sets of alternants; these may be found optionally alongside each other in the same verbs, and/or be distributed between different verbs of class IV/V(1). In one dialect - 33 (Soest) - the distribution is rather interesting. Two class IV verbs, NEM and KUM, show the type (f) alternation *a~ - *a: in the preterite. The other verbs of class IV/V(1) - that is, BREK, DREP, SPREK from class IV, and most of the class V verbs - have extended the short vowel of the B alternant throughout the preterite. The nature of this division is such that the two verbs with long vowels in the preterite have a following m, while those with short vowel in the preterite have a following voiceless plosive. This distribution of the pairs of alternants between different types of root-final consonants is not due to any phonological change. An account in terms of the schema might be appropriate, though this would not explain precisely why the root-final nasal consonant favoured one set of alternants while the voiceless plosives favoured the other; this may simply be due to chance.

We must finally mention some individual verbs which do not always show the same preterite alternants as other members of this class: WES "be", GEB "give" and SEHW "see". These special cases are not marked on the map, since only individual verbs are involved. We shall not discuss them in detail, but certain general observations may be made. It is striking that these verbs are all very basic elements of vocabulary, and consequently highly frequent lexical items. In the case of WES, it exhibits behaviour typical of highly frequent items: in some Dutch dialects, the verb WES retains the alternation *a - *a: while

other class IV/V(1) verbs have levelled it out. The developments involving GEB and SEHW are, perhaps, more surprising, in that they involve innovation rather than the retention of archaic features: in a few Westphalian dialects the verb GEB has developed preterite forms of the minor weak type; and in most of the Westphalian dialects the verb SEHW has developed different alternants from the rest of class IV/V(1). In both cases, interdialectal influence seems to be at work; this suggests that the forms of such highly frequent items may be diffused *as independent items*, across dialects.

We shall now turn to the distribution of umlaut in the preterite indicative of class IV/V(1). The alternant pairs (a2), (c2) and (c3), in which *a:+umlaut seems to have been replaced by *e:/*eo will also be discussed here. A map showing the distribution of umlaut and of these other pairs of alternants can be found on p.102.

We should first discuss the appearance of *e:/*eo in place of *a:+umlaut in some Eastphalian and Eastern dialects. The dialects in question now show a diphthong, usually ai, in the C forms of class IV/V(1) (and sometimes in the B forms as well - see below). According to Behrens (1924), this cannot be the reflex of *a:+umlaut, which is normally a monophthong, e:, in these areas. He suggests that it is in fact the reflex of *e:/*eo, which has been introduced by analogy with class VII.[49] Schirmunski (1962), on the other hand, claims that the reflex of *a:+umlaut in the Eastphalian dialects is monophthongal in disyllabic forms, and diphthongal in monosyllabic forms; though this does not, of course, account for the diphthong in the (disyllabic) C forms of class IV/V(1). Some dialect grammars (for example, those of dialects 23, 24, 25 and 26) agree with Behrens in deriving the diphthong from Pre-OS *e:/*eo, though they do not accept that it has arisen by analogy (see below). Others do not shed much light on this problem, since they give the diphthong as a possible reflex of *a:+umlaut solely on the basis of its occurrence in class IV/V(1) preterites. It is therefore difficult to assess the extent of the development; and dialects other than those marked on the map may also have replaced

Class IV/V(1) - umlaut

umlaut in B and C (and B = C)

umlaut in C

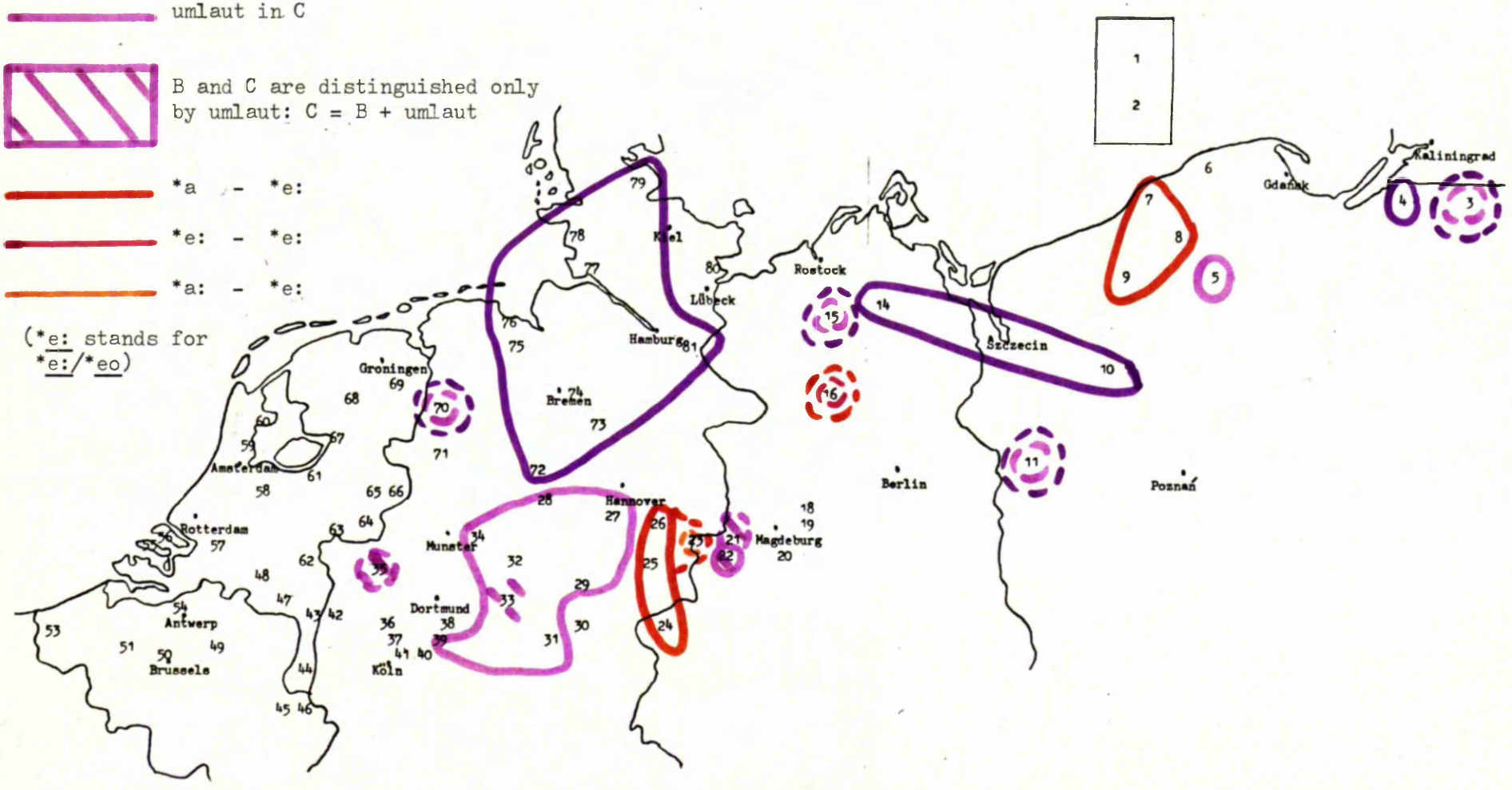
B and C are distinguished only by umlaut: C = B + umlaut

*a - *e:

*e: - *e:

*a: - *e:

(*e: stands for *e:/*eo)



*ai+umlaut by *ei/*eo (for example, dialect 22).

It might be argued that classes IV/V(1) and VII do not share any common alternant (such as the root vowel of the present tense or the past participle) which could have triggered the postulated analogical change. In other words, such a change would not conform to the traditional notion of proportional analogy. Lesse, in his grammar of dialect 26 (1933), does in fact object to the analogical account on precisely these grounds. Using an idea suggested by Sarauw (1921), he prefers to account for the *ei/*eo as a kind of double umlaut of Pre-OS *ai, that is, as an umlaut of *ai+umlaut, conditioned by a following pronoun containing the vowel i. This account is rather unconvincing; moreover, the objection to this type of analogy seems to be unwarranted. We have already encountered instances of "non-proportional" analogy, and others will emerge in the course of this study. Moreover, we can infer from Bybee and Slobin's work (1982) that a strictly proportional model is not a necessary condition for interparadigmatic analogy. They suggest that the preterite forms of verbs, for example, can interact with each other directly, despite differences in their present-tense forms (they hypothesise that this occurs via the formation of schemata representing prototypical preterite forms).

Returning now to umlaut, we can divide dialects with umlaut in the C forms alone into two types: those where B and C are distinct even without taking umlaut into consideration (though there may, unlike in previous classes, have been partial levelling between B and C); and those where there has been complete levelling between B and C, so that they are now distinguished only by the fact that the latter has umlaut. The pairs of alternants found in dialects of the former type are:

	B	C	
(a1)	*a	*a:+uml	(5, part of 19, 27, 28, 29, 32, 34; optional alongside *ai+uml - *ai+uml in 3, 11, 15)
(f)	*a~	*a:+uml	(31, 39; some verbs in 33)

The apparent quantitative levelling in the latter pair has already been

mentioned; it will be referred to again below. The pairs of alternants where B and C are distinguished only by umlaut are:

(b)	*a	*a+uml	(some verbs in 33; optional alongside *a - *a in 35)
(c1)	*a:	*a:+uml	(22; optional alongside *a: - *a: in 21)

As in previous classes, there is no positive, concrete evidence on the ordering of the changes which gave rise to these pairs of alternants. However, umlaut clearly appears in the C forms of this class in MLG; and given the fact that there are in general few signs of B/C levelling in MLG, it seems likely that levelling took place *after* the appearance of umlaut in the C forms. The sequence of changes would then be:

*a - *a:

v
v

umlaut in C
*a - *a:+uml

v
v

B/C levelling
*a: - *a:+uml

This type of development is rather different from that which we argued was possible in class II. There we were dealing with the extension of the B alternant, *au :

*au - *u

v
v

umlaut in C
*au - *u+uml

v
v

B/C levelling
*au - *au+uml

Where the levelling was in the other direction (that is, parallel to our present case), the change in the B alternant could always be analysed as levelling in favour of the (non-umlauted) past participle vowel, since, in all the dialects concerned, Pre-OS *u in an open syllable has merged

with the *o of the past participle:

B - C - D

*au - *u/*o - *u/*o

v
v

umlaut in C forms
*au - *u/*o+uml - *u/*o

v
v

B/D levelling
*u/*o - *u/*o+uml - *u/*o

Wherever there are similar developments in class III, the past participle is again available as a model for the B forms: in cases where *u is extended to the B forms, the past participle alternant is also *u ; and in cases where *o is extended, the past participle alternant is *o. The only exception is dialect 5, which has the following alternants in class III(b1):

B C D

*u - *u+uml - *o

and this can be accounted for by interparadigmatic analogy with class III(a), where the D alternant is *u.

Here in class IV/V(1), however, the past participle vowel cannot be called upon. As it stands, then, the development outlined above involves a "back-formation", in which a non-umlauted B alternant, *a:, has been abstracted out from the umlauted C alternant. This development looks rather implausible, and is rendered even more unlikely by the fact that *a: and its umlaut have undergone divergent phonological changes in these dialects: Pre-OS *a: has been rounded to ɔ:, while *a:+umlaut has been diphthongised to ai. As in classes II and III, however, there does prove to be an alternative account which makes it unnecessary to postulate a back-formation. In this case it is an analysis in terms of quantitative levelling, motivated by interparadigmatic analogy. As we discussed above, this is made more plausible by the fact that the reflex of Pre-OS *a: has merged with *a~ in these dialects, and the replacement of *a: by *a:/*a~ can therefore simply be analysed as the lengthening of

*a. This analysis is also supported by the ocurrence of pair (c2),*a: - *e:/*eo, in dialect 23. Here the *a: of the B forms *cannot* be a back-formation, because the C forms do not show the reflex of *a:+umlaut; it could, however, have arisen by quantitative levelling (in this dialect, also, *a: = *a~). It might, of course, be argued that the *a: of the B forms could have arisen, by a back-formation, at a time when the C forms still had *a:+umlaut rather than *e:/*eo. This chronology is, however, rather unlikely in view of the fact that the diphthongal reflex of *e:/*eo is found in the C forms in Eastphalia as far back as MLG (Behrens 1924).

The analysis in terms of a back-formation does, however, seem to be more plausible in the case of the alternation a~ - *a:+umlaut (type (f)). It has previously been suggested that this alternation arose by quantitative levelling, but there is also an alternative solution. In the southern Westphalian dialects (31, 33 and 39) which show this alternation, Pre-OS *a: and *a~ have *not* merged, and while *a: has been rounded to ɔ: (as in most Westphalian dialects), there is still an unrounded long a vowel, a:, the reflex of *a~ (which no longer occurs only in open syllables). Moreover, in these three dialects, Pre-OS *a:+umlaut has not been diphthongised, but has remained as e: or ɛ:. It might, then, have been possible for e: or ɛ: to be analysed, on a synchronic basis, as the umlauted vowel corresponding to a: < *a~ (parallel to the short vowel alternation a - e), despite the fact that this was not historically justified. Such a back-formation might be the origin of the B alternant *a~ in these dialects. Given the fact that we do not have unambiguous, independent evidence that such back-formations can occur, the analysis in terms of quantitative levelling is perhaps preferable. But the fact that *a~ - *a:+umlaut (now a: - e: or ɛ:) is a plausible umlaut relationship may have been a contributory factor in the development of this alternation.

In the dialects with umlaut throughout the preterite, only one pair of alternants is found:

B	C	
*a:+uml	*a:+uml	(4, 10, 14, 70, 72, 73, 74, 75, 76, 77, 78, 79, 81; optional alongside *a - *a:+uml in 3, 11, 15)

These dialects do not pose any particular problems. It is clear from MLG evidence (Lasch 1914 and Behrens 1924) that umlaut was introduced first in the C forms; and given the fact that in this class there are dialects which still preserve an optional *a in the B forms, it seems more likely that *a:+umlaut was extended to the B forms in one step:

*a - *a:

v
v

umlaut in C
*a - *a:+umlaut

v
v

umlaut in B and
B/C levelling together
*a:+uml - *a:+uml

Although this seems to be a case where the 1st/3rd singular preterite has been influenced by the 2nd singular and plural, we showed earlier that two other factors must be taken into account: firstly, the relationship between the preterite indicative and subjunctive; and secondly, interparadigmatic analogy (with classes I and VII).

Classes IV/V(2) Neglecting umlaut, the pairs of alternants found in this class are:

	B	C
(a)	*au	*au
(b)	*o:	*o:
(c)	*o	*o
(d)	*u	*u
(e)	*au	*u
(f)	*o:	*u
(g)	*au	*o

(h) (*a) *u

The distribution of these alternants is shown on the map on p.109. Where pairs have become indistinguishable because of vowel mergers (for example, (a) and (b) where *au and *oi have merged), the dialect in question is marked for both pairs. These cases should not be confused with those represented by dotted isoglosses, where different pairs occur optionally side by side, or are distributed between different verbs within the class. Note that in a few dialects (28, 31, 32, 58 and 61) the alternants of class IV/V(1) occur optionally alongside those of class IV/V(2) in the same lexical items. In dialect 34 (type (h)), the B alternant of class IV/V(1), *a, is *always* retained; only the C forms show a new alternant, *u, and even this is optional alongside *ai from class IV/V(2).

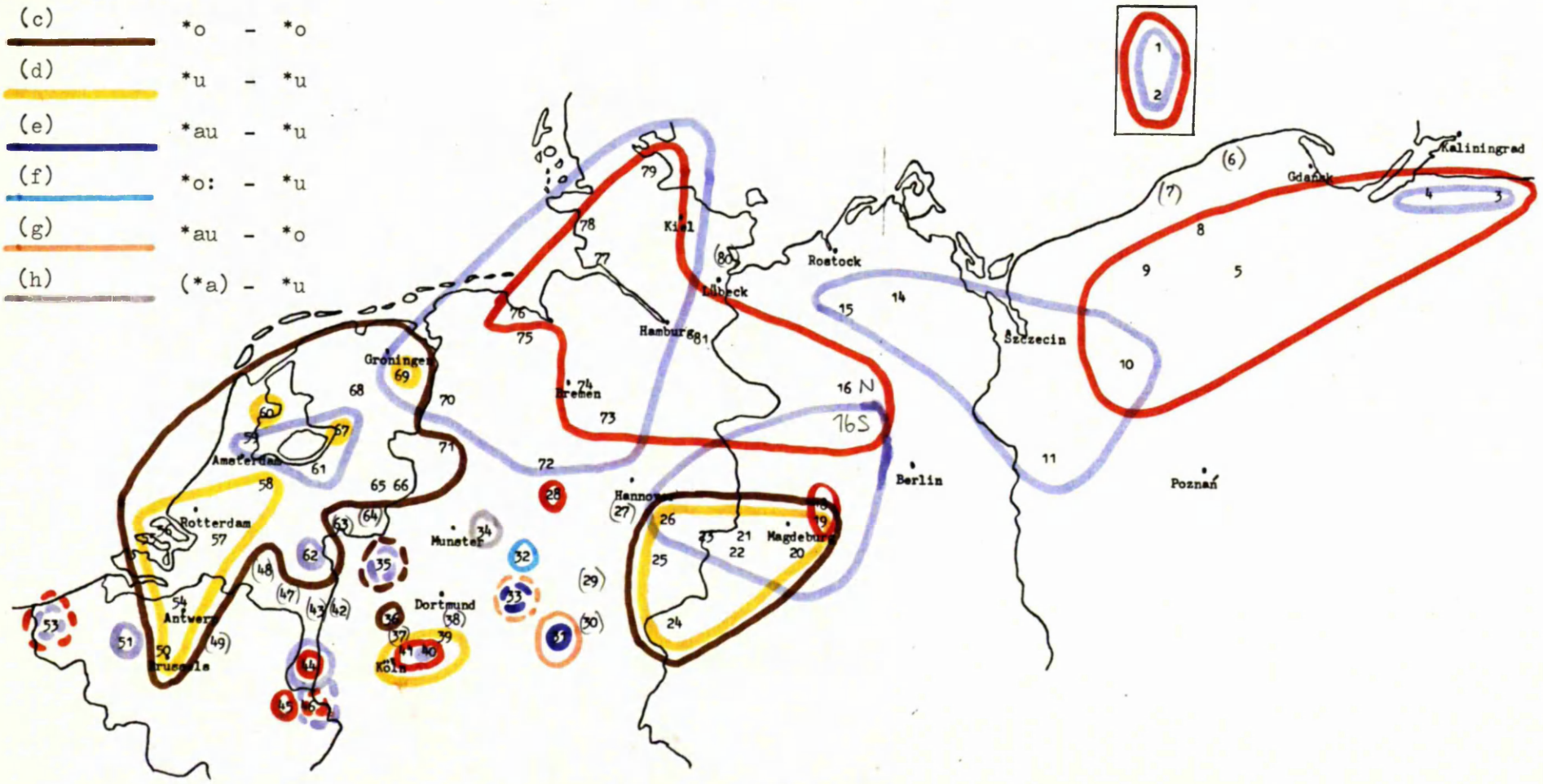
This apparently complex picture can in fact be reduced to two main developments: in nearly all the dialects the alternants of class IV/V(2) are the same as those of class II or class VI or both. This is represented on the map on p.110 (overlapping isoglosses denote that classes II and VI show the same alternants, except where a broken line is used).

In a large majority of dialects, the alternants are the same as those of class II. We may therefore conclude that a major factor in the development of the new paradigms was interparadigmatic analogy with class II. Since it is mainly class IV verbs (with *o in the past participle like class II) which have adopted the new conjugation, it seems likely that this assimilation in the preterite was triggered by the past participle, acting as a "hinge" between the two classes.

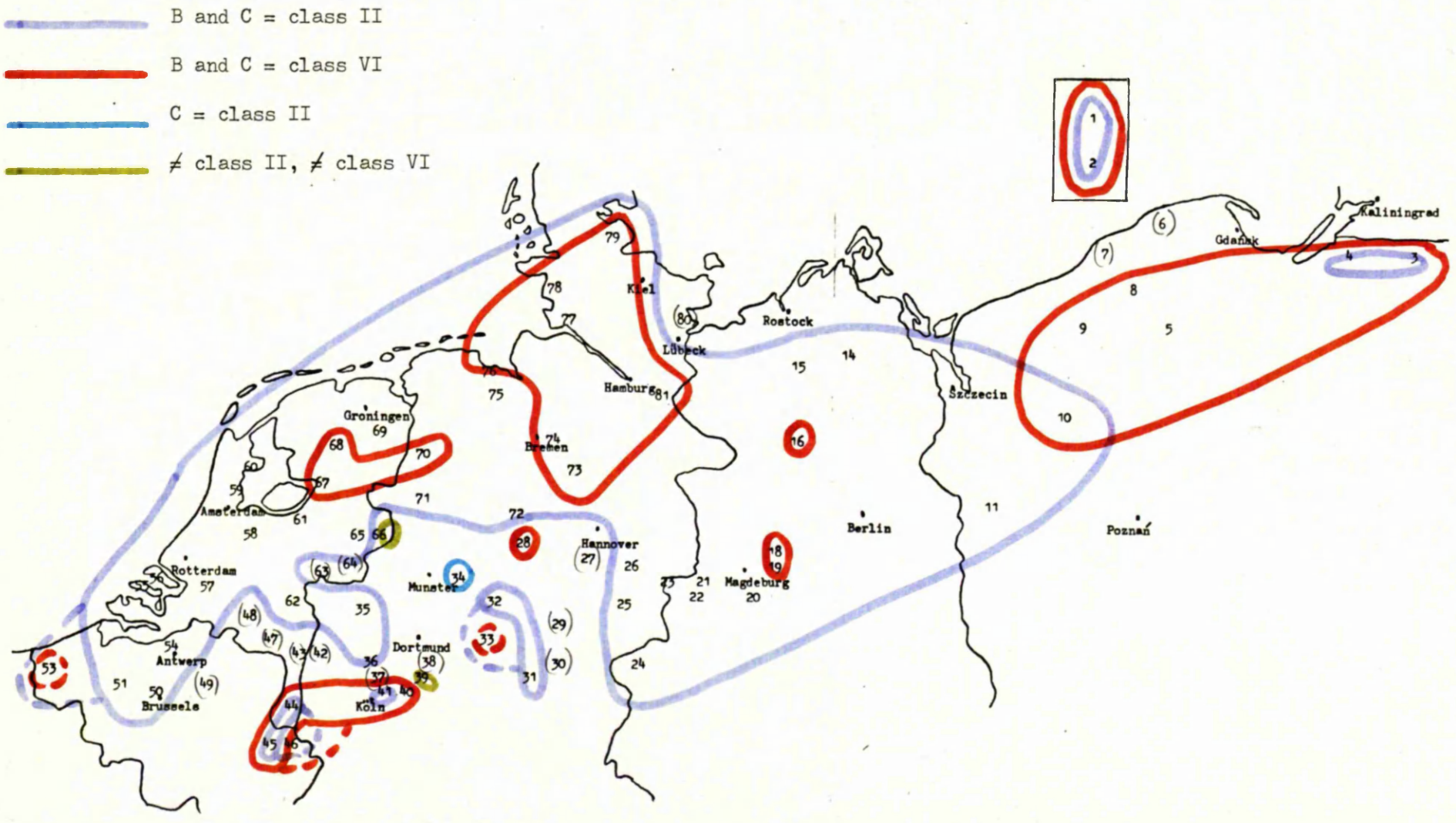
In those areas (mainly Dutch dialects) where the preterite vowel of IV/V(2) is actually the reflex of Pre-OS *o, this new preterite formation could be analysed as an extension of the past participle alternant itself (except where the preterite has umlaut, which is rare in these dialects - see below). However, this same vowel is usually also found throughout the preterite of class II in these dialects. It therefore seems likely that interparadigmatic analogy with class II is

Class IV/V(2)

	B	-	C
(a)	*au	-	*au
(b)	*o:	-	*o:
(c)	*o	-	*o
(d)	*u	-	*u
(e)	*au	-	*u
(f)	*o:	-	*u
(g)	*au	-	*o
(h)	(*a)	-	*u



The relationship between IV/V(2) and classes II and VI



an important factor here too, just as it is in most of the dialects where the preterite and past participle do *not* agree in this way.

In about half of these dialects, the preterite vowel of class II also coincides with that of class VI, with the result that classes II, IV/V(2) and VI all have the same preterite vowel. There are three different ways in which this identity has arisen; (a) in, for example, dialects 73, 74, 76, 77, 78 and 79, *au and *o: have merged by sound change (and class II has levelled in favour of the B alternant, *au); (b) in dialects 15, 70 and 72, class VI has acquired *au throughout the preterite, by analogy with class II; and (c) in dialects 16N and 81, class II has acquired *o: throughout the preterite, by analogy with class VI. In case (a), it is not immediately clear whether the primary influence in the remodelling of class IV/V(2) was class II or class VI. But given the fact that the influence of class II is predominant in many other dialects, and that it can readily be accounted for by the coincidence between the past participle vowels of classes II and IV, it is probably the major factor here also. In case (b), the influence of class II is probably primary, because the agreement between classes II and VI is itself the result of the analogical remodelling of class VI on class II. We do not, however, know the order of these changes: class VI could have been remodelled before or after the new class IV/V(2) conjugation developed; or the two phenomena could be contemporaneous, and might both be part of a general spread of *au preterites. In case (c), also, we do not know the chronology. Only if class II had already been remodelled on class VI before the emergence of IV/V(2) could it have provided a model for this development; otherwise, these few dialects must join those discussed below, where class II plays no role.

There are eleven dialects where the preterite of at least some class IV/V(2) verbs does not coincide with that of class II: 5, 8, 9, 28, 33, 39, 40, 46, 53, 66 and 71. Dialects 5, 8, 9, 28, and 40, and some verbs in dialects 46 and 53, have *o: throughout the preterite, and interpardigmatic analogy with class VI therefore seems to be at work. It is notable that all these dialects except 53 are situated near to

areas where classes II and VI exert a combined influence, because Pre-OS *au and *o: have merged; dialect contact may therefore account for this deviation from the usual pattern of remodelling on class II. It should also be pointed out that in some of the dialects the past participle vowels of classes IV and VI, Pre-OS *o and *a respectively, have merged by sound change (in open syllables), and the past participle may therefore have acted as a "hinge" between the two classes.

In dialect 33, most class IV/V(2) verbs show the reflex of Pre-OS *o: in the B forms and *u (more precisely, *u+umlaut; see below) in the C forms. In other words, while the C forms follow class II, the B forms usualy follow class VI (though a few verbs optionally have *au in the C forms, and thus are modelled on class II throughout the preterite). It should be mentioned, with reference to the C forms, that class VI can also optionally have *u+umlaut in the C forms, by analogy with class II, instead of the expected *o:+umlaut. Holthausen (1886) claims that this influence of class II on class VI is indirect, via the verbs which we have called class IV/V(2); however, it is perhaps more likely that is was class VI which first adopted the class II alternant, *u+umlaut, and then passed on the alternation *o: - *u+umlaut wholesale to classes IV/V (ii). What is unquestionable is that there is much interaction between classes II, IV/V(2) and VI, and that at least the class IV/V(2) B forms in *o: must be attributed to the influence of class VI. Dialect 33, like the other dialects showing the influence of class VI, is situated near to areas where *au and *o: have merged. In addition, the class VI verb DRAG may be important here: it has extended e, the umlaut of *a, throughout the present tense, so that is resembles a class IV/V verb in the infinitive and in the 1st singular and the plural present, but retains the characteristic class VI preterite in *o:. This verb may then have motivated original class IV/V verbs to adopt *o: in the preterite.

In dialects 39 and 66, the preterite of class IV/V(2) follows neither class II nor class VI. In dialect 66, the alternant *o (plus umlaut) is found, while class II shows the reflex of *au. A simple

extension of the past participle alternant into the preterite is also ruled out, because the preterite shows an umlauted vowel. In fact, analogy with class III seems to be at work here. The past participle alternant may have acted as a hinge between the two classes: class IV shares the same past participle vowels, *o, as class III(b).[50]

In dialect 39, one class IV/V(2) verb, STEK, has extended the past participle vowel throughout the preterite (unlike class II, which has levelled in favour of the B alternant, *au). The other two class IV/V(2) verbs, on the other hand, LES and STEL, show a rather surprising development, which is difficult to account for: the preterite shows the reflex of Pre-OS *u (which remains distinct from *o) throughout. Frebel (1957) claims that this is an extension of the past participle vowel *u of KUM (the following nasal prevented lowering to *o here); but this seems rather unlikely, since the development does not affect the verb KUM itself, and the past participles of the verbs STEL and LES retain the reflex of *o. Another possibility is that these verbs were influenced by class II *before* class II levelled in favour of *au, and that they then levelled in the opposite direction to class II, that is, in favour of the C alternant, *u. However, since the C forms in this dialect have an umlauted vowel (see below), the extension of *u to the B forms would have involved the type of back-formation which we discussed above, on p.105, and for which we concluded there was little evidence. It seems, then, that we must leave this problem without a satisfactory solution.

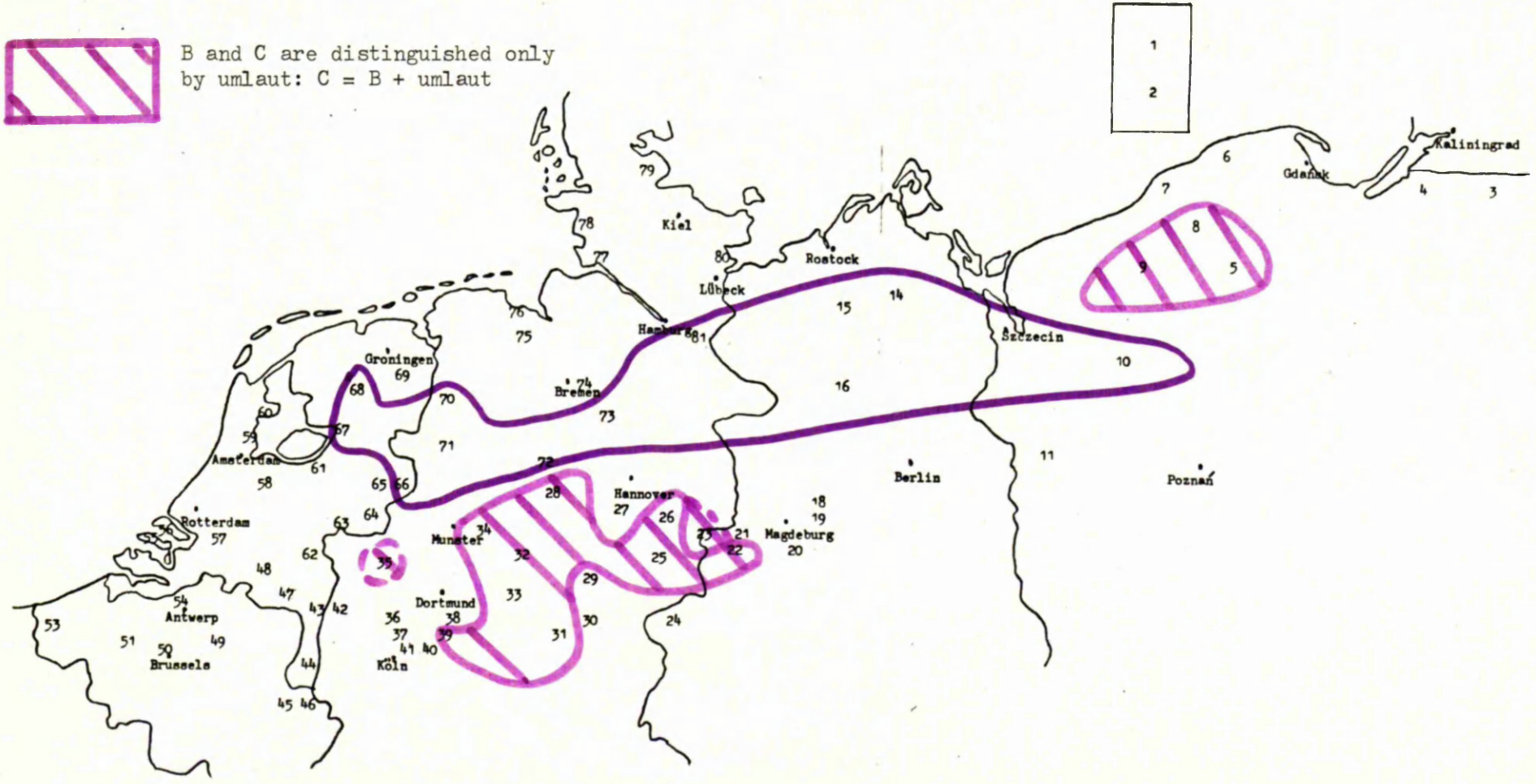
The distribution of umlaut in the preterite indicative of class IV/V(2) is illustrated on the map on p.114. There is very little comment to add to the map. The situation regarding umlaut in this class agrees with that in the class on which it has been remodelled; that is, in general it agrees with class II, and otherwise with class VI or III. The alternants where C has umlaut, and B and C are also distinct even disregarding umlaut, are as follows:

Class IV/V(2) - umlaut

umlaut in B and C (and B = C)

umlaut in C

B and C are distinguished only by umlaut: C = B + umlaut



	B	C	
(e)	*au	*u+uml	(optional alongside *o: - *u+uml in 33)
(e/f)	*au=*o:	*u+uml	(31)
(f)	*o:	*u+uml	(optional alongside *au - *u+uml in 33)
(g)	*au	*o+uml	(32)
(h)	(*a)	*u+uml	(34)

Where B and C are distinguished only by the fact that the latter has umlaut, the following alternants occur:

(a)	*au	*au+uml	(optional alongside *au - *au in some verbs in 35)
(b)	*o:	*o:+uml	(5, 8, 9, 28)
(c)	*o	*o+uml	(optional alongside *o - *o in some verbs in 35)
(a/c/d)	*au=*o=*u	*au=*o=*u+uml	(22, 26; optional alongside *au=*o=*u - *au=*o=*u in 23)
(c/d)	*o=*u	*o=*u	(25)
(d)	*u	*u+uml	(39)

The dialects with umlaut throughout the preterite show the following alternants:

(a)	*au+uml	*au+uml	(14, 15, 70, 72)
(a/b)	*au=*o:+uml	*au=*o:+uml	(10, 16S, 73)
(b)	*o:+uml	*o:+uml	(16N, 81)
(a/c)	*au=*o=*u+uml	*au=*o=*u+uml	(67)
(d)	*o+uml	*o+uml	(66, 68, 71)

Class VI The distribution of alternants is illustrated on the map on p.117. The following pairs are found:[51]

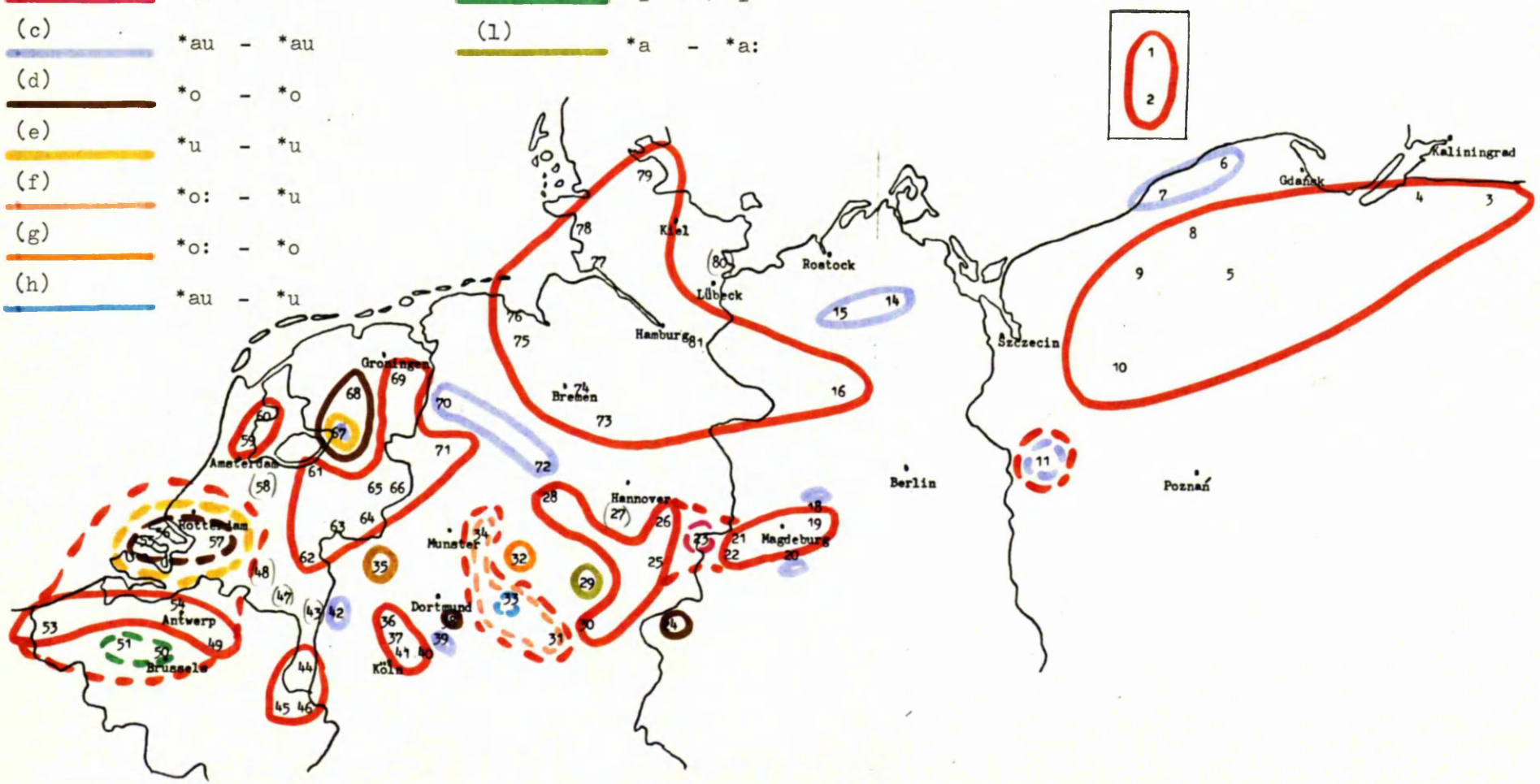
		B	C	(D)
Pre-OS		*o:	*o:	(*a)
Modern dialects	(a)	*o:	*o:	
	(b)	*o:	*a	
	(c)	*au	*au	
	(d)	*o	*o	
	(e)	*u	*u	
	(f)	*o:	*u	
	(g)	*o:	*o	
	(h)	*au	*u	
	(j)	*e:	*e:	
	(k)	*i	*i	
	(l)	*a	*a:	

In this class, unlike the previous ones, the Pre-OS B and C alternants were the same, and there is therefore no question of levelling between B and C. Instead we find that, in some Westphalian and Eastphalian dialects, a distinction between the B and C alternants has been *introduced* (types (e), (f) and (g)), because either the whole preterite indicative, or just the C alternant, has been influenced by class II. It would seem that interparadigmatic analogy has taken place at the expense of an increase in the number of alternants within the paradigm. It should, however, be pointed out that in these dialects we would in any case expect an umlaut distinction between B and C, so that they would not be absolutely identical even if the interparadigmatic change had not occurred (see below for discussion of the umlaut alternation in this class).

In one dialect, we find (optional) levelling between the C alternant and that of the past participle, in favour of the latter, giving rise to pair (b). Note again that although it appears as though this change has introduced a distinction between B and C, these alternants would in any case have been distinguished by umlaut, and

Class VI

	B	-	C
(a)	*o:	-	*o:
(b)	*o:	-	*a
(c)	*au	-	*au
(d)	*o	-	*o
(e)	*u	-	*u
(f)	*o:	-	*u
(g)	*o:	-	*o
(h)	*au	-	*u
(j)	*e:	-	*e:
(k)	*i	-	*i
(l)	*a	-	*a:



indeed are so distinguished in the pair *o: - *o:+umlaut which occurs alongside *o: - *a.

All the pairs of alternants apart from (a) and (b) show the influence of other classes. The most common model is class II: this accounts for pairs (b) to (g). In about a third of the dialects showing the influence of class II, classes VI and II share the same past participle alternant, because of the merger of *a and *o. In the remaining dialects, there is no such shared alternant. It may, however, be possible to account for this interaction by interdialectal influence, at least where the relevant preterite alternant is *au. The dialects concerned are located close to areas where *au and *o: have merged, and where, therefore, a connection between classes II and VI has arisen by sound change. This interaction may then have extended beyond the area where *au hand *o: have merged (cf. the discussion of the influence of class VI on class II, p.71, and the map on p.72).

In dialects 67 and 68 (which both show umlaut throughout the preterite), the notion of a preterite schema containing the vowel *ø:* may be useful. A general preference seems to have developed for the vowel *ø:* in the preterite (and indeed also in the past participle) of strong verbs: this same vowel occurs in classes II, IV/V(2) and VI, and in some class VII verbs. In dialect 67 this vowel is the reflex of Pre-OS *au/*o/*u+umlaut, while in dialect 68 it is the reflex of Pre-OS *o+umlaut only; but the actual present-day form of the vowel seems to be more important than its history, and interdialectal influence seems to be at work.

Pair (j), which occurs in just one dialect (35), must have arisen by analogy with class VII. The A and D alternants may have served as a "hinge" between these two classes. In the class VI verb SLAH, at least, the present and past participle show the reflex of *aha ;[52] the -h- in this sequence had been lost already in OS, and the ~~(the -h- in this sequence had been lost already in OS, and the resulting~~ vowel merged with *ai, which is found in the corresponding forms of some class VII verbs (such as LA:T).

Pair (k), with (lengthened) *i throughout the preterite, appears to be modelled on class I: the two dialects which show this type (50 and 51) have levelled in favour of the C/D alternant *i in the preterite of class I. The remaining pair, (l), found in just one dialect (29), has come from class IV/V(1). In neither of these cases are there shared alternants which might have served as a hinge between class VI and the classes which have influenced it.

The question now arises, why class VI is particularly prone to the influence of other classes. We may hypothesise that its small membership has led to a lack of cohesion within class VI: in some dialects, the only class VI verbs which have remained strong (apart from WAHS, etc., discussed below) are DRAG and SLAH.

The distribution of umlaut in the preterite indicative of class VI is illustrated on the map on p.120. Class VI is unique with respect to the extension of umlaut from the subjunctive to the indicative. Whereas in class II, for example, the extension of umlaut from the preterite subjunctive to the C forms of the indicative reduces the number of alternants within the paradigm:

B versus C versus C~ >> B versus C/C~

in class VI it does not result in any such reduction:

B/C versus C~ >> B versus C/C~

The C forms have simply "switched allegiance" from the preterite indicative to the preterite subjunctive. Moreover, it should be noted that the appearance of umlaut in the C forms actually introduced an alternation within the preterite indicative of class VI where none had previously existed (as we discussed earlier, in those dialects where B and C are now distinct in class VI, due to interparadigmatic analogy, this distinction probably arose after the appearance of umlaut in the C forms).

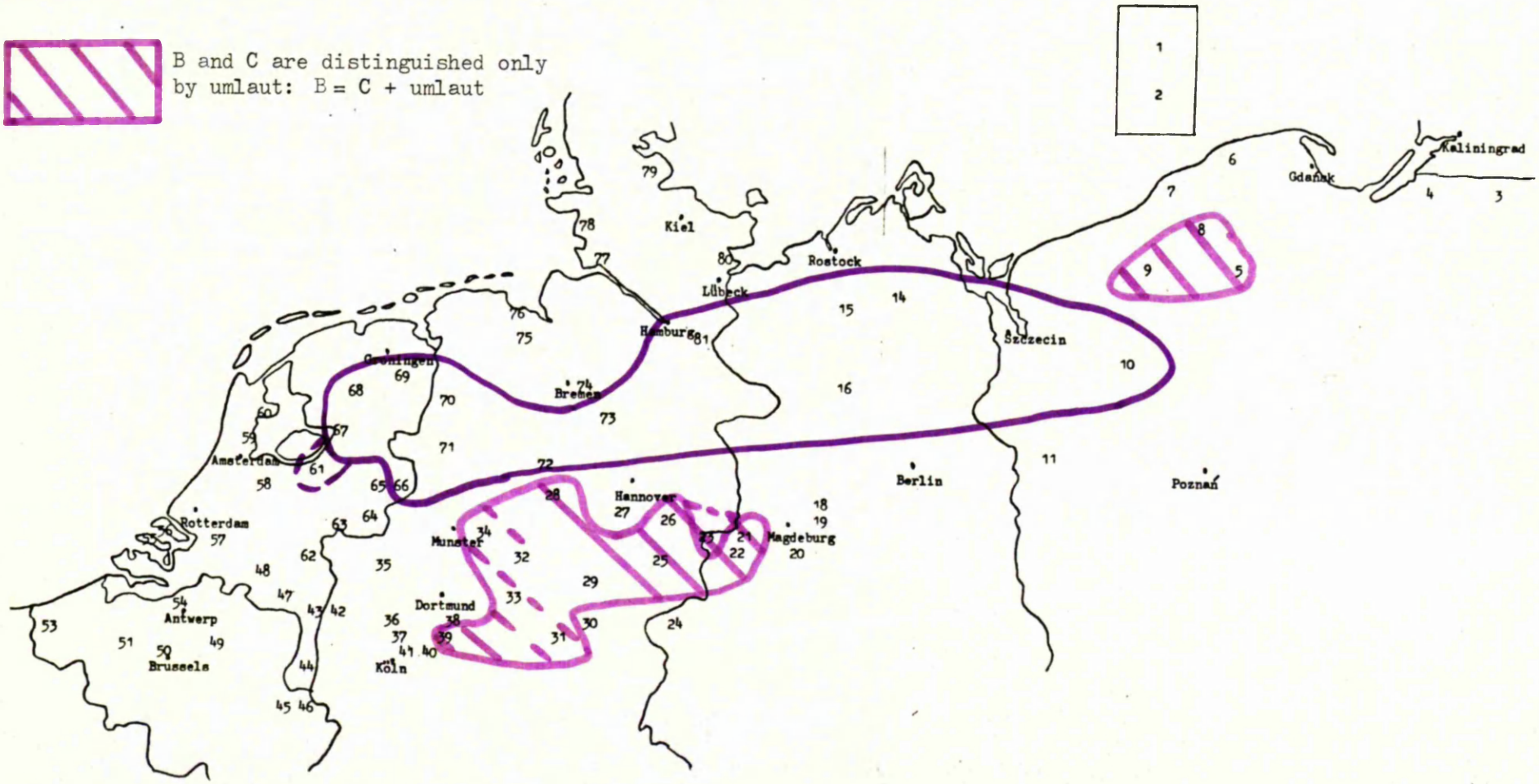
As in other classes, the dialects with umlaut in the C forms only may be divided into those where there are other differences between B and C beside the fact that C has umlaut, and those where B and C are distinguished only by umlaut. In contrast to the other classes,

Class VI - umlaut

umlaut in B and C (and B = C)

umlaut in C

B and C are distinguished only by umlaut: B = C + umlaut



however, it is the former dialects which have innovated, while the latter preserve the reflexes of the Pre-OS alternants intact (apart, of course, from the fact that the C forms have umlaut). In all cases where class VI has been remodelled on another class, the situation with respect to umlaut agrees with that of the class concerned. It should be noted, however, that in dialect 29 (with pair (1) by analogy with class IV/V(1)), the C alternant shows œ:, the new, "analogical" umlaut of *a:, rather than ai, which is the more direct reflex of *a:+umlaut. In this respect it follows the class IV/V(1) verb SEHW, rather than the majority of class IV/V(1) verbs.

In dialects where the distinction between B and C is not simply a matter of umlaut, the possible pairs of alternants are:

	B	C	
(f)	*o:	*u+uml	(optional alongside *o: - *o:+uml in 31, 33 and 34; in 33 also alongside *au - *u+uml)
(g)	*o:	*o+uml	(32)
(l)	*a	*a+uml	(29)

In dialects where B + umlaut = C, the possible alternants are:

(a)	*o:	*o:+uml	(5, 8, 9, 21, 22, 25, 26, 28; optional in 23, 31, 33, 34)
(b)	*au	*au+uml	(39)

Where umlaut has spread throughout the preterite indicative, the alternants are as follows:

(a)	*o:+uml	*o:+uml	(10, 16, 66, 69, 71, 73, 81; some verbs in 61)
(b)	*au+uml	*au+uml	(14, 15, 70, 72)
(d)	*o+uml	*o+uml	(68)
(b/c/d)	*au=*o=*u+uml	*au=*o=*u+uml	(67)

The occurrence of *o+umlaut in some verbs in dialect 61 (which does not show umlaut in any other strong verb classes) seems to be due to the influence of neighbouring dialects (67 and 68), in which, as we mentioned above, the preference for the preterite vowel øː is very

strong.

WAHS, WASK We mentioned in the discussion of MDu that these verbs (along with some class III verbs) had tended to adopt the reflex of *e: in the preterite, by analogy with class VII. Reflexes of these formations are still found in the modern standard Dutch language, though they are archaic, having generally been replaced by forms of the major weak formation. In one Dutch dialect (47) these verbs still show the reflex of *e:. Otherwise, where the grammars mention the verbs specifically, the Dutch and Belgian dialects tend to show preterite forms of the major weak type. Some Eastern Dutch dialects (60, 67, 68, 69), however, retain strong forms, and show the same developments as the Low German dialects (see below).

In the Low German dialects, these same verbs usually show a short vowel in the preterite, which seems to be due to shortening before a root-final consonant cluster. These verbs have preterite forms with a short vowel in MLG (Lasch 1914); and the shortening can therefore be supposed to have taken place before the root-final clusters had been simplified (already in MLG *hs was represented orthographically by ss, and *sk by sch; the modern dialects show s and š respectively). In most dialects, these verbs have short vowels throughout their paradigm, because the *a of the present tense and past participle was not lengthened before the root-final cluster. In some Rhineland dialects, however, there has been a more recent lengthening (or even diphthongisation) of *a before s and š. Where this has happened, the preterite also tends to show a long vowel (that is, the reflex of *o: *without* shortening). Indeed, only in one dialect outside this area (25) do these verbs show a long preterite vowel. This coincidence suggests that the long vowel of the preterite in the Rhineland is an analogical introduction from other class VI verbs, after the pressure favouring a short vowel throughout the paradigm had been removed by sound change.

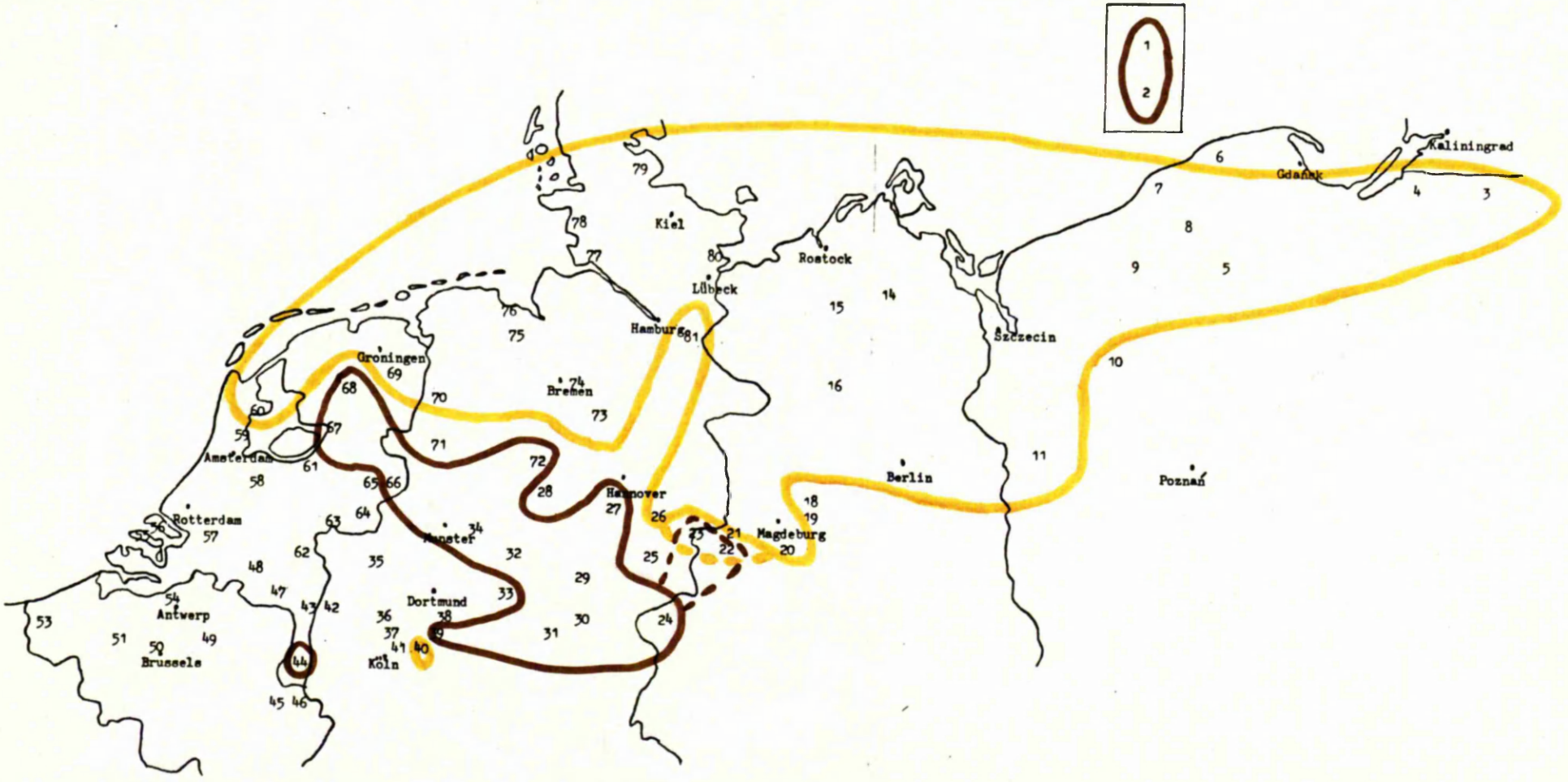
The actual short vowel found in the preterite of WAHS and WASK in the Low German dialects varies between o and u ; the map on p.123

WAHS and WASK

B - C

u - u

o - o



shows the distribution of these two vowels. Both o and u are also found in MLG; Lasch (1914) claims that they have each developed from different reflexes of OS o: (< Pre-OS *o:): "da für dies o: auf einem Teil des Gebietes uo anzusetzen war,[53] so sind eine Anzahl Nebenformen mit u vorhanden...". In fact, however, the division of the modern dialects according to whether they show o or u does not correspond to any division according to nature of the reflex of Pre-OS *o:; though this does not mean that there could not have been a correspondence at an earlier stage. It is possible that interparadigmatic analogy with class III might have played a part in determining whether the preterite vowel was o or u. In nearly all dialects, the preterite vowel of these verbs corresponds to at least one of the sub-classes of class III (most frequently to III(b1)); the exceptions are a few southern Westphalian dialects (29, 30 and 31), where WAHS and WASK have o throughout the preterite, while class III either has *u throughout, or the alternation *a - *u. It is significant that these verbs clearly show the influence of class III in the past participle (with o or u rather than expected a) in a large number of dialects. This interaction may have arisen because class III is the only other class with a short vowel throughout the paradigm (apart from some class VII verbs, and these too have frequently been remodelled on class III in the preterite).

There is little of interest to say about umlaut in the preterite indicative in these verbs. In nearly all the dialects they show the same distribution of umlaut as class III (which is perhaps further evidence of the influence of class III). However, dialect 5 is rather unusual in having no umlaut at all in the preterite in WAHS and WASK, whereas class III, like all the other strong verb classes, does show umlaut in the C forms.

STA(N)D The present tense of this verb existed alongside that of the "athematic" verb STA: in OS, but had been replaced by the forms of this latter verb by MLG. The preterite (and sometimes the past participle) forms of STA(N)D have, however, been retained to the present-day, and

serve as the preterite paradigm of STA:. In OS, the preterite usually retained a form without a medial n: sto:d,[54] though occasional preterite forms in n (stuond) are found (Holthausen 1921). By MLG, sto:d had all but disappeared, being retained mainly for the purpose of rhyme (Lasch 1914). In the new forms with root-final nt/nd, the root vowel was shortened, as in WAHS and WASK, because it preceded a cluster: stunt, stont. The question of the two preterite vowels u versus o was discussed above with reference to WAHS and WASK. In the case of STA(N)D, the modern dialects show a marked preference for u over o ; u occurs in a number of dialects where WAHS and WASK show o. This causes more problems for Lasch's proposal that o results from the shortening of o:, and u from the shortening of uo ; if this were true we would expect all verbs with shortening to agree within a particular daielct. We can, however, account for the prevalence of u in STA(N)D by interparadigmatic analogy with class III(a), which contains verbs with a similar root-final cluster, and generally has u throughout the preterite.

In a few dialects, STA(N)D has adopted the preterite vowel i, at least optionally alongside u. The model for this development seems to be a group of class VII verbs (GANG, FA:H, HA:H), which have i in the preterite in these same dialects (see the discussion of class VII below, and the tables on pp. 127 and 128). It is significant that all the dialects where i occurs in the preterite of STA(N)D are ones where the reflex of nd is ŋ, and where the root-final consonant of STA(N)D is therefore the same as that of GANG etc..

In dialect 53, the preterite of STA(N)D shows an unshortened reflex of Pre-OS *o:, and the consonant following this vowel is g, rather than the expected nasal cluster. It appears that this preterite is modelled on that of the class VI verbs SLAH (the modern forms are stoeg and sloeg respectively).

Class VII This class can be divided into two sub-groups, on the basis of whether the preterite vowel is long or short. At an earlier stage, this distinction depended on whether the vowel was followed by a single

consonant or by a cluster in the preterite. However, these conditions have been obscured in some dialects. We shall begin by discussing the verbs with a short preterite vowel.

Class VII(1) The verbs which can potentially belong to this class in the modern dialects are: GANG, FA:H, HA:H, FALL and HALD. As we discussed in the section on Pre-OS, it is not certain whether these verbs originally showed *e or *e: in the preterite. In OS all these verbs generally showed e in the preterite, with occasional forms in ie (<*e:) in certain manuscripts. In MLG, forms in e and i occur side by side in the preterite of these verbs. Lasch offers two alternative accounts for the i forms: i may have developed from e, by raising before a nasal cluster (and analogical spread to the other verbs of this group), or from ie, by shortening before a cluster. Note that HALD, however, often shows e:, which according to Lasch results from the lengthening of e before ld. In MDu, ie (<*e:) is the standard preterite vowel.

The tables on pp.127 and 128 show the distribution of preterite vowels for these verbs. The following points should be made concerning this table. In many cases, the alternants are given in terms of the Pre-OS vowels of which they are the reflex. However, where dialects show e or i, the historical phonology is not absolutely clear (especially in the case of i), and the present-day alternant is therefore given. Where dialects show a vowel which has merged with the reflex of *e: (but which may have arisen by the lengthening of e before ld), the symbol "*e:" is nevertheless used.

It is notable that HALD, and to a lesser extent FALL, often show a long vowel in the preterite, but rarely any of the other verbs of this group, even in the Dutch dialects. The restriction of the long vowel, in the main, to HALD and FALL strongly suggests that it has arisen by the lengthening of e before ld (merging with *e:), as Lasch suggests for MLG. In other words, the long vowel would have originated in the verb

Class VII(1)

	GANG	FA:H	HA:H	FALL	HALD
1	i		*o	*o	i
2	i				i
3	i	*u		*u	*e:
4	i	*u	*o	*u	*e:
5	i			*e:	*e:
6	i	*u	*u	*u,*e:	*e:
7	*u	*u	*u		*e:
8	i	*u	*u	*e:	*e:
9	i	*u		*e:	*e:
10	*u+uml	*u+uml	*u+uml	*o:+uml	*o:+uml
11	*u,i	i	*u	*e:,*ai, *o:,*au	*e:,*ai, *au,*o:
14	*u+uml	*u+uml	*u+uml	*o+uml	*o+uml
15	*u+uml, i	*u+uml	*u+uml	*o+uml, *e:	*o+uml, *e:
16	*u+uml	*u+uml	*u+uml	*u+uml	*u+uml
18	*u,i	*u,i		*e:,*o:	*e:,*o:
19	*u,i	i,*e:	i,*e:	*e:,*o:	*e:,*o:
20	*u,i	*u,*e:	*u,i,*e:	*e:,*o:	*e:,*o:
21	*u	*o		*o	*e:
22	*u-*u+uml	*u-*u+uml	*u-*u+uml	*o-*o+uml	*e:
23	*u, *u-*u+uml	*u,*o, *u-*u+uml, *o-*o+uml	*u, *u-*u+uml	*o,e	*e:
24	*u	*u	*u	*u	*u
25	*u-*u+uml			e	*e:
26	*u-*u+uml			e	*e:
27	*u,i				
28	*o-*o+uml, *u-*u+uml, e,i	i,e	*u,e	e	*e:
29	*u-*u+uml	e	e	e	e
30	i	i	i	*e:	*e:
31	e	e	e	e	e
32	*u-*u+uml	e	e	e	*e:
33	e	e	e	e	e
34	*o-*o+uml, e	*o-*o+uml	*o-*o+uml	*o-*o+uml	*o-*o+uml
35	e	e	e	e	e
36	*u,i	*u,i	*u,i	*e:	*e:
37	*u			*e:	*e:
38	i	*u	*u	*e:	*e:
39	*o-*o+uml		*o-*o+uml	*o-*o+uml	*o-*o+uml

	GANG	FA:H	HA:H	FALL	HALD
40	*u,i		*u	*e:	*e:
41	*u		*u	*e:	*e:
42	*u	*u,i	i	*e:	*e:
43	i	*u	*u		
44	*u	*u	*u	*o:	*o:
45	i	*u	*u	*o:	*e:
46	e	*o	*o	*e:	*e:
47	*u/*o	*u/*o	*u/*o	*e:	
49	*u/*o,i	*u/*o,i	*u/*o,i	*e:	i,e,*e:
50	*u/*o,i		*u/*o,i	*e:	*e:
51	*u/*o,i	*u/*o,i	*u/*o,i		*e:
53	*u/*o,i	*u/*o,i	*u/*o,i	*e:	*e:
54	*u/*o		*u/*o	*e:	*e:
55	*u/*o,i	i	i		*e:
56	*u/*o,i	*u/*o,i	*u/*o,i	*e:	*e:
57	*u/*o,i	*u/*o,i	*u/*o,i		*e:
58	*u/*o,i	*u/*o,i	*u/*o,i	*e:	*e:
59	*u/*o,i	*u/*o	*u/*o,i	*e:	*e:
60	*u,i	*u,i	*u,i	*e:	*e:
61	*u,i	*u,i	*u,i	*e:, *o:+uml	*e:
62	i	*u,i	*u,i		*e:
63	*u	*e:	*e:	*e:	*e:
64	i	i		*e:	*e:
65	*u	*u	*u+uml		
66	*u+uml, *o+uml	*u+uml, *o+uml	*u+uml, *o+uml	*o~+uml, *o:+uml	*o~+uml, *o:+uml
67	i	*u+uml	*u+uml	*au+uml	*au+uml
68	*u+uml	*u+uml	*u+uml	*o+uml	*o+uml
69	*o,i	*o	*o	*u	*o:
70	*u+uml	*u+uml	*u+uml	*u+uml	*u+uml
71	*o+uml			*o+uml	*o+uml
72	*u+uml	*o+uml	*o+uml	*o+uml	*o+uml
73	*u+uml	*o+uml	*o+uml	*o+uml	*o:+uml
74	*u	*u	*u	*u	*e:
75	*u		*u	*u	
76	*u		*u	*u	*u
77	*u	*u	*u	*u	*o,*e:
78	*u	*u	*u	*u	*e:
79	*u	*u	*u	*u	*e:
80	*u				
81					*au+uml

HALD, and then spread analogically to FALL. Note that FALL never has a long vowel unless HALD does; and note also that in nearly all the dialects where FALL has a long vowel, FALL and HALD now have the same root-final consonant, because ld and ll have merged in l.

Even for HALD, however, the possibility of analogy with class VII(2) verbs (which always have a long vowel) must be taken into account. It is significant that in all dialects where HALD shows a long vowel, the vowel in question is the same as that of at least some class VII(2) verbs. In some cases this is not the expected lengthened e, but a vowel such as *o:+umlaut, which has been adopted analogically from class VI; for these developments, see the discussion of class VII(2) below.

The long vowel has occasionally been extended to other verbs of this group (FA:H and HA:H in dialects 19, 20 and 63). In general, however, GANG, FA:H and HA:H have retained a short vowel; the same is true of FALL in the Westphalian, Eastphalian, NLS and some Eastern dialects. Even HALD shows a short vowel in a few dialects (it is not clear whether this is because the MLG lengthening failed to apply in these dialects, or whether a short vowel has been reintroduced by analogy). In some cases, the short vowel which we find in these verbs is e or i, as in MLG; the distribution of these two vowels seems to be areally determined, with e concentrated in the West- and Eastphalian dialects. However, there are very many instances where e/i has been replaced by *u or *o. The model for this analogical development is probably class III, and in particular III(a). This class does not have any root vowels in common with the class VII verbs in question. However, the similar root structures of the two sets of verbs may have motivated the change. The verbs GANG, FA:H and HA:H, in particular, have the same root-final element, ŋ, as a large number of class III(a) verbs.[55] This change could be interpreted in terms of a preterite schema of the form ...uŋ.

This infiltration of *o and *u into class VII(1), though very widespread, has nevertheless met some resistance. Firstly, it is not

common among the Westphalian dialects. It is significant that these dialects tend to retain *a, at least alongside *u, in the B forms of class III. The pressure towards analogical change in class VII(1) is therefore less intense. Secondly, the verb GANG tends to be more resistant to the change then either FA:H or HA:H. We may hypothesise that the frequency of GANG favoured the retention of the older vowel e/i in the face of analogical pressure. In addition, the fact that it is a very irregular verb, with the present tense formed from a different root (GA:), may have isolated it from other strong verbs.

In class VII, as in class VI, there was originally no distinction between B and C. Moreover, the spread of umlaut from the subjunctive to the C forms of the indicative, which is observed in MLG and some modern dialects, and which has given rise to a distinction between B and C in class VI, would not be expected to affect class VII, because the vowel of the preterite (indicative and subjunctive) was not susceptible to umlaut (cf. class I). However, where e/i has been replaced by *u/*o, the verbs of class VII(1) follow the pattern of class II with regard to umlaut. This has meant that, in some dialects, interparadigmatic change has introduced a distinction between the B and the C alternants into VII(1); indeed, it has led to an overall increase in the number of alternants within the paradigms of these verbs.

Class VII(2) The distribution of vowels in the preterite of class VII(2) is illustrated on the map on p.131. The following pairs of alternants are found:

		B	C
Pre-OS		*e:,*eo	*e:,*eo
Modern dialects	(a)	*e:/*eo	*e:/*eo
	(b)	*o:	*o:
	(c)	*au	*au
	(d)	*o	*o
	(e)	*ai	*ai
	(f)	*a	*e:/*eo

B - C

Class VII(2)

(a) *e: - *e: (*e: = *eo)

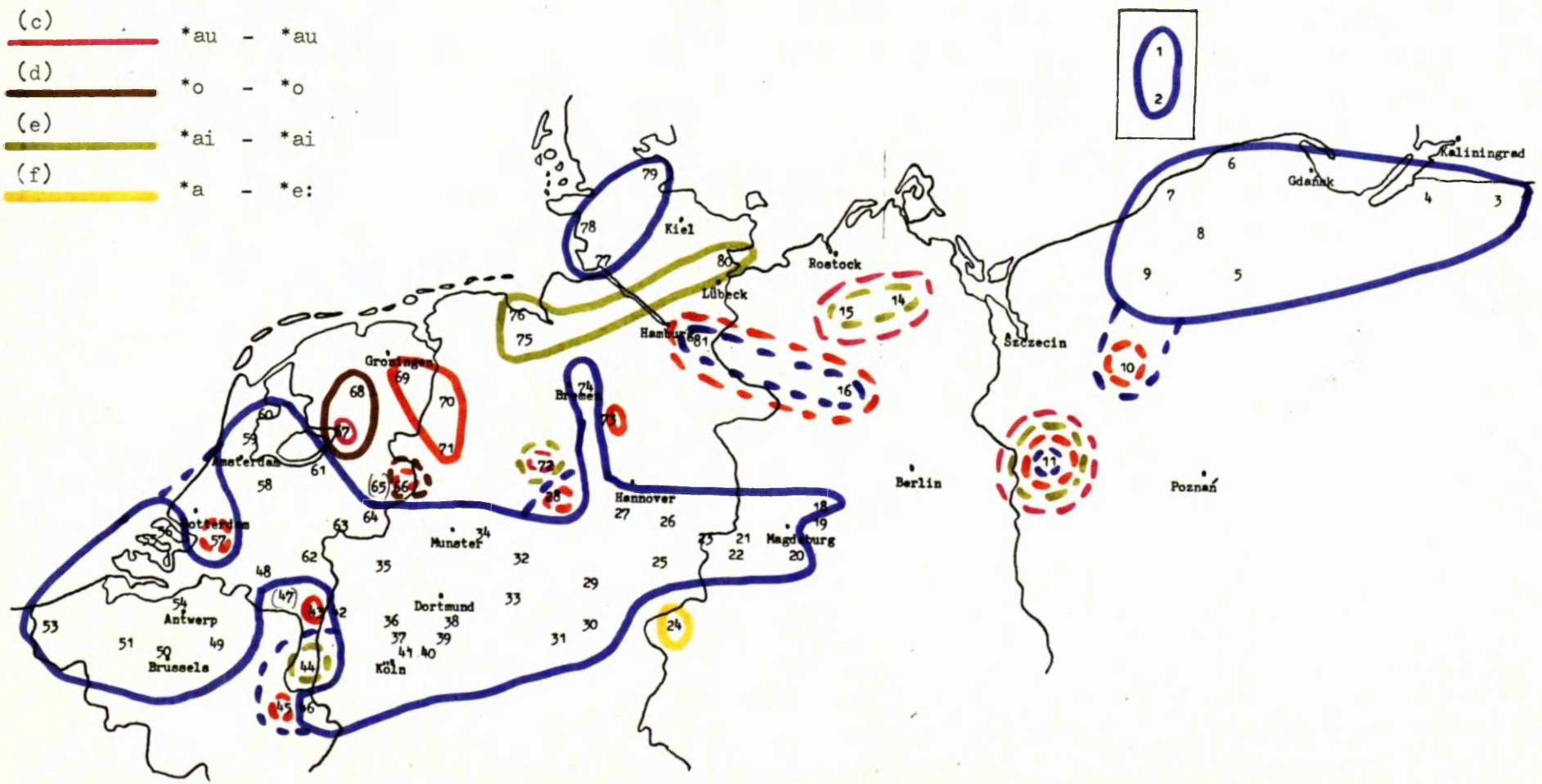
(b) *o: - *o:

(c) *au - *au

(d) *o - *o

(e) *ai - *ai

(f) *a - *e:



In Pre-OS, these verbs could be divided into two groups, according to whether the preterite vowel was *e:/*eo ; this distinction was maintained in OS. However, in MLG, MDu and all the modern dialects, the reflexes of *e: and *eo have fallen together in a single vowel.

Many class VII(2) verbs have now become weak. This may be because the class is not very cohesive, having a variety of present-tense vowels (see the discussion of Pre-OS and OS). There is also a tendency for verbs to retain a strong past participle (which has the same vowel as the present tense), but to become weak in the preterite. In a few dialects, on the other hand, the class shows a limited degree of productivity, and has even attracted some weak verbs (the verb MAK, in particular).

The main verbs of this class which have remained strong are: LA:T, SLA:P, HLAUP, HRO:P, HAIT, BRA:D, RA:D, and BLA:S (plus FALL and HALD from class VII(1) in many dialects - see the tables on pp. 127 and 128). STAUT is also occasionally strong; however, its present tense has generally been replaced by that of the weak verb STAUTJ, and its preterite and past participle are usually weak as well. HAIT also has a weak preterite and past participle in several dialects. The weak forms of these two verbs are generally of one of the minor types in the modern dialects. The suggests that they are fairly old formations; and weak forms are in fact quite common in MLG. BRA:D, RA:D and BLA:S, on the other hand, tend to adopt the major type of weak conjugation; and where they have remained strong, they have frequently adopted preterite forms from class VI (especially BLA:S). Only in the Westphalian and some Dutch/Flemish dialects do they retain the reflex of Pre-OS *e:. The interaction with class VI may have been triggered by the fact that they have the same A and D alternants as SLAH (cf. p.118: aha has merged with *a:); this is true in all dialects. Indeed, in many dialects they have the same A and D alternants as most class VI verbs, because the reflexes of *ai and *a have merged. It might be argued that LA:T and SLA:P also have this same root vowel, yet they do not undergo this remodelling (except in the dialects discussed below). However, BRA:D, RA:D and

BLA:S are closer to class VI in their root structure: since d has generally been lost intervocalically, BRA:D and RA:D now have a root-final vowel in some forms of the present tense and in the past participle, just like SLAH; and BLA:S at least has a root-final fricative, like the principal verbs of class VI (DRAG, GRAB and the preterite of SLAH). It should be pointed out that where the interaction between classes VI and VII(2) is confined to these verbs, it is not marked on the map on p.131.

We shall now turn to the interaction between classes VI and VII in verbs other than BRA:D, RA:D and BLA:S, which occurs in far fewer dialects. Where the alternant *o: is indicated on the map, the preterite of class VII(2) has obviously been remodelled on class VI. Moreover, even where the alternants *au or *o are indicated, a comparison with the map on p.117 reveals that class VI also shows these vowels in the dialects concerned, so that remodelling on class VI can again be assumed. It is also notable that, in many of these dialects, class II shows the same vowel as class VI (either because of merger by sound change or by analogical change in one of classes II or VI), and this would have reinforced the influence of class VI on class VII(2).

We must now consider the reasons for this interaction between the two classes. For some class VII(2) verbs (LA:T, SLA:P), we can point to shared A and D alternants with some class VI verbs (cf. BRA:D, RA:D and BLA:S discussed above). This will not, however, account for the change in the verbs HLAUP and HRO:P; it is possible that these verbs have been affected because they share the same root-final consonant as SLA:P.

Other factors should also be considered. If the map on p.131 is compared with that on p.120, it emerges that most of the dialects which show levelling between VI and VII(2) are ones in which class VI has umlaut throughout the preterite. In the dialects where this is not the case (19, 28, 43, 45) only isolated class VII(2) verbs have been remodelled. When we take away these isolated instances, we are left with a geographically restricted group of dialects (mainly southern

NLS), which have replaced the reflex of *ei/*eo with the umlaut of *o:, *au or *o. It is therefore possible that the developments are not independent. In the Eastern Dutch dialects, where the vowel in question is the reflex of different Pre-OS vowels in neighbouring dialects, we may be dealing with the spread of a particular vowel, regardless of its origin, from dialect to dialect, and through the strong verb system. In dialect 69, the vowels of the preterite do not in general show umlaut; nevertheless, classes VI and VII(2) do show the vowel ui, which is the reflex of *o:+umlaut. Kloeke (1955), in discussing the northward spread of umlaut in the indicative preterite, argues that it is the actual diphthong ui which is spreading as a preterite alternant, rather than the general use of umlauted subjunctive forms in the indicative. Further evidence of this, he claims, is the appearance of ui in new strong preterites of some formerly weak verbs (for example, MAK, FRAG). This could be interpreted in terms of a preterite schema containing the vowel ui.

The fact that the new class VII(2) vowel is usually umlauted suggests another possible motivation of the change. Since three of the verbs with which we are concerned have root-final p (SLA:P, HLAUP, HRO:P), it could be interpreted as sporadic vowel rounding before a labial consonant; Katara (1939) suggests this possibility, alongside the influence of class VI. The rounded vowel would then have been passed on, analogically, to LA:T. The fact that, in dialect 16, *o:+umlaut is only optional in LA:T, whereas it is obligatory in SLA:P, HLAUP and HRO:P, would support this hypothesis, though too much emphasis should not be placed on an isolated example.

Several dialects show the alternants *ai - *ai (pair (e)). In the dialects concerned, class I has levelled in favour of the B alternant, *ai, and we can therefore account for the class VII(2) alternants by interparadigmatic analogy with class I. Note that these two classes do not have any alternants in common; the change cannot therefore be accounted for in proportional terms.

In dialect 24 an alternation has been introduced into the

preterite of this class (pair (f)). The C forms show the expected reflex of *e:/*eo, but the B forms have been remodelled on class IV/V(1), and show the reflex of *a (a similar change has affected class I in this dialect). Again, this change cannot be accounted for in proportional terms. Note, incidentally, that this dialect also shows interaction between class VII and class IV/V(1) in the C forms, but the influence has been in the other direction, so that class IV/V(1) has the C alternant *e:/*eo.

Finally, in dialect 11, the reflexes of four different vowels are found in the preterite of class VII(2): *e:/*eo, *ai (from class I), *o: (from class VI) or *au (from class II). Of these, only *ai is found in all the verbs, either on its own or optionally alongside other vowels. From this variety of alternants, we may conclude that class VII(2) has broken down completely in this dialect, and that its verbs were still in a state of flux when the grammar was written.

The distribution of the B and C alternants among categories We have assumed so far that, where there is a distinction between B and C in the preterite indicative, the B alternant is found in the 1st/3rd singular, and the C alternant in the 2nd singular and the plural. This is true for most dialects. This is the distribution inherited from OS, and is still found in most dialects where the distinction is maintained; the extension of umlaut into the preterite indicative has not changed this situation. Note, however, that in some Dutch and Flemish dialects (where a distinction between B and C is retained in class IV/V(1)), this distribution has in a sense been re-created: the original 2nd singular form has been lost, and the old 2nd plural form is now used for both the 2nd singular and plural; hence the 2nd singular shows the alternant of the plural.

In some dialects, however, this distribution has been modified. The 2nd singular has adopted the alternant of the 1st/3rd singular, giving rise to a split which follows the category of number:

B	C
singular	plural

The map on p.137 indicates the type of distribution found in each dialect, whenever there is a distinction between B and C. One rather unusual distribution, which is found (optionally) in dialect 49, should be mentioned. Here, as in all Flemish dialects, the old 2nd singular form has been replaced by the 2nd plural, so that a single form now serves for both the 2nd singular and plural. This single, ambiguous form may show either the vowel of the 1st/3rd plural, giving rise to the distribution

B		C
sg 13	vs	sg 2
pl 123		

or that of the 1st/3rd singular, resulting in the unique distribution

B		C
sg 123	vs	pl 13
pl 2		

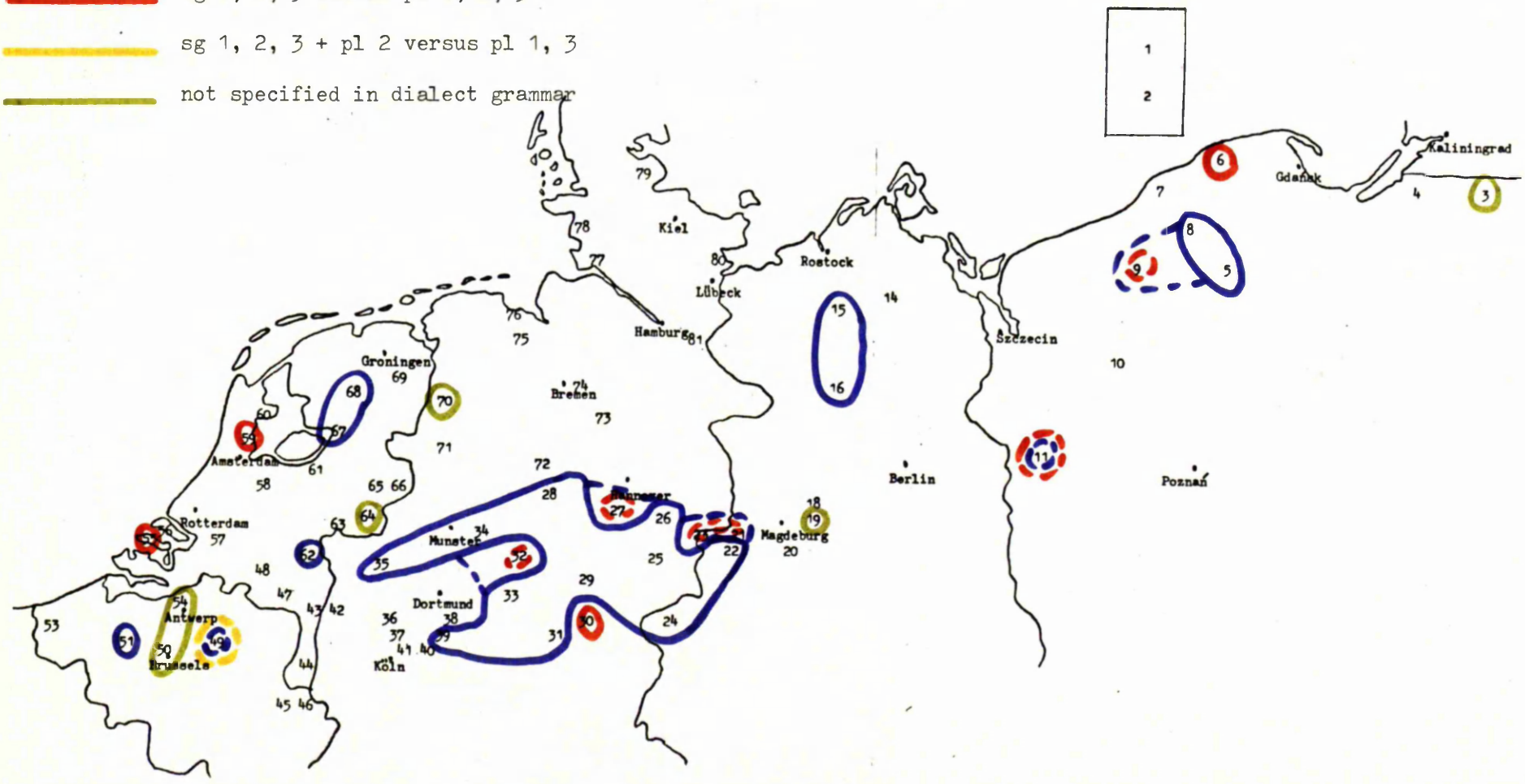
The distribution of the B and C alternants among forms

sg 1, 3 versus sg 2 + pl 1, 2, 3

sg 1, 2, 3 versus pl 1, 2, 3

sg 1, 2, 3 + pl 2 versus pl 1, 3

not specified in dialect grammar



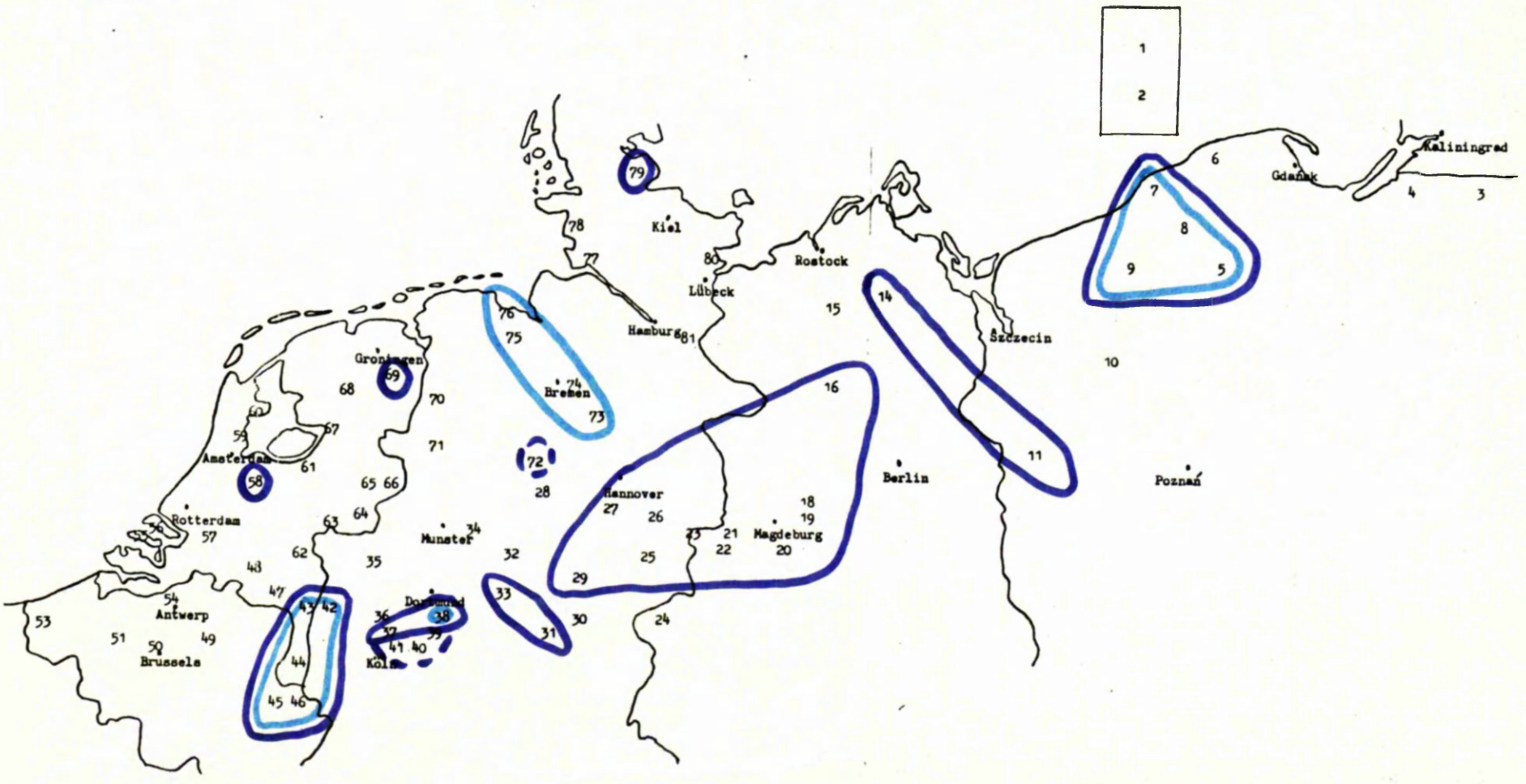
4.5.2 The past participle (D) alternant The past participle contrasts with the preterite in undergoing only a very few analogical changes (which are summarised on the maps on pp.139 and 142). This may partly be because the conditions which triggered some of the changes in the preterite - the presence of an alternation between B and C in some strong verbs - has no parallel in the past participle. Consequently, we might argue that, in contrast to the preterite, the past participle had no inherent instability. In addition, bearing in mind the fact that many of the dialect grammars state that the preterite is rather infrequent, it might be claimed that the perfect tense, (which contains the past participle), is unmarked with respect to the preterite. Recall also that in the previous section we encountered many examples where the root vowel of the past participle was extended to the preterite; the direction of this remodelling was taken to be symptomatic of the marked status of the preterite versus the past participle. The scarcity of changes affecting the past participle might be a further reflection of its relatively unmarked status.

One very widespread feature is the appearance of the vowel u in the past participle of class III(b1) (that is, verbs with a root-final 1C), where we would perhaps expect o. This is found in about half of our dialects, and is distributed among all areas (excluding the many Dutch dialects in which *u and *o have merged in this environment). It is not clear whether u has developed from *o by sound change, or whether it does in fact represent the reflex of *u, and has arisen by analogical change. Assuming, to begin with, the latter alternative, there are two possible sources. Firstly, it could be accounted for by intraparadigmatic change: the extension of the alternant of the C forms of the preterite. Problems would arise with this account in some dialects, where the C forms now show *u+umlaut; though it might be possible to argue that the u in the past participle arose before the C forms acquired an umlauted vowel. The second possible source is class III(a) (that is, the verbs with original root-final NC, now sometimes simply N). In these verbs u would be expected, because PGmc *u did not

The vowel u in the past participle of classes III(b1) and III(b2)

u in III(b1)

u in III(b2)



undergo lowering to *o before a non-high vowel if a nasal cluster intervened. Classes III(a) and III(b1) have several points in common which could have triggered this analogical development. They share the same alternants except in their A and D forms:

	A~	B	C	C~
III(a)	i	a >> u (>> y)	u (>> y)	y
III(b1)	i	a >> u (>> y)	u (>> y)	y

They also have a similar root structure: III(a) with root-final NC (now sometimes > N) and III(b1) with root-final lC (now sometimes > l).

We have so far assumed that the u vowels in the participle of III(b1) have arisen by analogical change. It should be noted, however, that u is the most common variant in the past participle of III(b1) in MLG, and Lasch (1914) attributes it to sound change: o > u before lC. Of course, MLG contains many features which are completely foreign to many of our dialects, and we would not expect a sound change affecting MLG necessarily to affect all the dialects. This raises the question, whether we could account for the distribution of u versus o in the past participle of III(b1) in the modern dialects in terms of sound change. This is difficult to judge, because many of the dialect grammars do not clearly specify the expected reflexes of vowels in such environments; moreover, they often complicate matters by taking MLG as their starting point. However, the explanation in terms of sound change seems unlikely, in view of the pattern of distribution of o versus u. If the difference were attributable to sound change, we might expect the distribution to be clearly areal: some areas would show u, others o. However, as we have already noted, both o and u appear in almost all areas. Occasionally, (in dialects 40, 41, 72 and 77) u and o are even found side by side in the same dialect: some III(b1) verbs have u, others o. This type of distribution would be more characteristic of independent analogical developments, occurring in some dialects in all areas. Moreover, the grammars of the dialects themselves do not generally account for u in the past participle of III(b1) by sound change. There seem, then, to be two possibilities. Firstly, no sound

change o > u would have taken place, and the u vowels would have arisen by analogical change in all areas (and in MLG, pace Lasch). Secondly, in some areas u would have arisen by sound change, o by analogical change, while in others, conversely, u would have arisen by analogical change and o by sound change. If the second alternative is chosen, and an analogical origin is postulated for at least some cases of o, then the source would have to be the participle of III(b2), where o is the expected alternant.

If we now turn to class III(b2) itself, we see that here too some dialects show u in the past participle, rather than the expected o (the dialects that do so are a subset of those with u in the past participle of III(b1)). This must be an analogical development; as in class III(b1), there are two possible sources. Firstly, all of the dialects in question also show u (with or without umlaut) in the preterite, so that an account in terms of intraparadigmatic analogy is possible[56]; though again there are difficulties where the preterite shows umlaut.[56] Secondly, this class may have been influenced by class III(a), where u in the past participle is expected.

Another fairly widespread phenomenon is the appearance of u or o in the past participle of the class VI verbs WAHS and WASK, where we would expect the reflex of *a. This is found mainly in Eastern and NLS and dialects, but occasionally also in West- and Eastphalia. In many cases, the same vowel is also found in both the B and C forms of the preterite of these verbs (where it has probably arisen by the shortening of *o: before a consonant cluster), and the development can therefore be analysed as an extension of this vowel to the past participle. Problems arise with this account in dialects where the preterite now shows an umlauted vowel. Of course, it is possible that the u/o was extended to the past participle *before* umlaut spread from the optative into the indicative preterite. Alternatively, the influence of class III may have given rise to the u and o vowels in the past participle. This interaction could have been based on the fact that at least some class III verbs share the same preterite vowel as these two verbs.

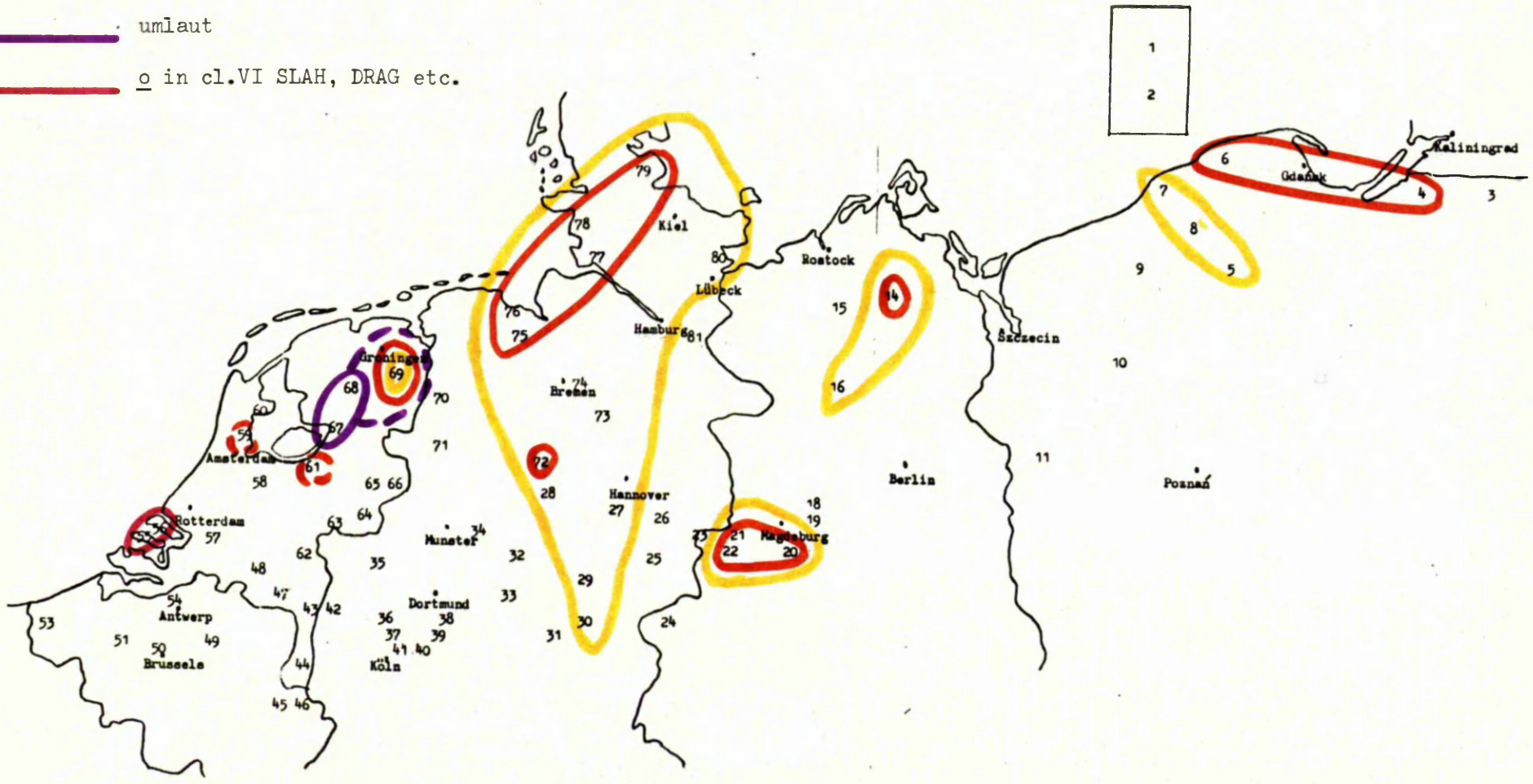
Other phenomena affecting the past participle

u/o in cl.VI WAHS and WASK

u/o in cl.VII FA:H, MA:H (and GANG)

umlaut

o in cl.VI SLAH, DRAG etc.



A similar phenomenon also affects the past participle of the class VII verbs FA:H, HA:H and occasionally FALL in a few dialects (mainly NLS). Again the vowel u (or occasionally o) appears where we would expect a. However, this change cannot be seen in isolation from a more widespread phenomenon involving the preterite forms of these verbs. As we mentioned in our discussion of the preterite, the B and C forms of these verbs[57] often show the reflex of Pre-OS *u or *o instead of expected i or e. The source of the u and o vowels seems to be class III, and, as we said in the last chapter, the interaction between the two groups of verbs seems to have been triggered by similarities in their root-final consonants. The appearance of u or o in the past participle can therefore be seen as an extreme form of this interaction, in which the past participle of these verbs as well as the preterite has been influenced by class III.

A rather interesting development in the past participle can be observed in some Eastern Dutch dialects. In dialects 67, 68, and to a lesser extent 69, the umlauted vowel of the preterite seems to have been extended to the past participle. In dialects 67 and 68, nearly all strong verbs show this development; in dialect 69, by contrast, only a few class III(b2) verbs are affected. Hol (1937) suggests that the umlauted vowels are due to an essentially phonological development, conditioned by a postulated *-in suffix on the past participle. This would contrast with the suffix *-an found in OS and reflected in most of the modern Dutch and Low German dialects; but there are clear reflexes of participles in *-in in OE, OFrisian and ON. Since there are no records of the Dutch dialects in question at stages sufficiently early to show whether the ending was *-in or *-an, Hol's account can be proved neither false nor correct.

However, as Kloeke (1955) points out, it seems preferable to account for the umlauted vowels in the past participle as analogical extensions from the preterite (which, of course, acquired umlauted vowels from the subjunctive). He compares a detailed map showing the extent of umlauted vowels in the preterite in this area with a map drawn

by Hol showing the area with umlauted vowels in the past participle. Most areas with an umlauted vowel in the past participle also have umlauted vowels throughout the preterite (where, of course, it has spread from the preterite subjunctive). Although there are a few points on the borders of the area where the past participle has umlauted vowels while the preterite does not, Kloeke claims that there are strong arguments, based on the principles of dialect geography, which suggest that these points did once have umlauted vowels in the preterite, but later lost them, while retaining them in the past participle. Another point to note is that in some cases the umlauted vowel which appears in the past participle is not the reflex of the Pre-OS vowel plus umlaut (as Hol's account would lead us to expect), but is instead identical to the vowel found in the preterite.

In our three dialects 67, 68 and 69, the developments can generally be analysed in terms of the extension of the vowel of the preterite (the B and C forms generally have the same alternant in these dialects) to the past participle. However, a problem is posed by some class IV verbs in dialects 67 and 68. The verb NEM in dialect 67 and the verbs NEM, BREK, STEK in dialect 68 retain the reflex of the Pre-OS alternation *a - *a: in the preterite, or have extended *a throughout the preterite. However, these verbs nevertheless show the reflex of *o+umlaut, rather than expected *o, in the past participle. This must be ascribed to interparadigmatic analogy. In particular, the model may have been other class IV verbs, which have the reflex of *o+umlaut throughout the preterite and past participle. The interaction may have been based on the common A alternant (the reflex of Pre-OS *e) shared by these two groups of verbs:

	A	B	C	D		A	B	C	D
STEL	*e	*o+uml	*o+uml	*o+uml	=	model			
NEM	*e	*a	*a/*a:	*o	>>	*e	*a	*a/*a:	*o+uml

This seems particularly likely in view of the fact that the verb KUM, with a *different* A alternant, retains a vowel without umlaut in the past participle.

The final development affecting the past participle occurs in dialects 55 and 56. Here the past participle of class VI seems to have been influenced by class II, and shows the reflex of Pre-OS *o/*u in an open syllable, instead of the expected reflex of Pre-OS *a. The influence of class II can also be seen in the preterite of these verbs, but only optionally: the reflex of *o/*u appears alongside the expected reflex of Pre-OS *o:. Note that the interaction between classes II and VI here cannot be based on any shared alternants; nor do there seem to be any similarities between the root-final consonants of the two groups.

Notes to chapter 4

1. The Pre-OS vowel system described in chapter 3 is assumed. Here and throughout this chapter, segments should be understood as phonemic unless specifically marked otherwise.

2. Isolated verbs, such as class IV KUM, with *u in the present tense rather than *e-*i, are omitted from this table.

3. Comparison with other Gmc languages suggests that the class V verbs ET and FRET may have had the B alternant *a: rather than *a (cf. Gothic frei:t). The verbs are not attested in the 1st/3rd singular preterite indicative form in OS.

4. Indeed, Antonsen (1972) claims that these allophones were already present in 1PGmc.

5. The ePGmc system proposed by Antonsen (1972) and described in chapter 3 is assumed here.

6. Again, the ePGmc vowel system proposed by Antonsen (1972) is assumed. The PIE system is also adapted from Antonsen 1972. Note that he considers PIE *i and *u to be allophones of the semi-vowels *j, *w respectively; by ePGmc, Antonsen assumes that *i and *u have become independent phonemes. The syllablic liquids and nasals are considered to be allophones of the nasal and liquid consonants in both ePGmc and PIE. (By 1PGmc they had become sequences of *u plus nasal or liquid consonant.)

7. Cf. the 1PGmc system outlined in chapter 3, based on Antonsen 1972.

8. Note that Gothic does, however, show the reflex of "*e:2" in loans and a few other words, though it has merged with the reflex of 1PGmc *æ: or "*e:1".

9. He must assume that its spread to class VII(c) (cf. Pre-OS LA:T) occurred later, as this group of verbs will not fit the "mirror analogy" account.

10. Once again, isolated verbs, such as class IV kuman, have not been included.

11. The class IV verb NEM sometimes shows i throughout the present and in the infinitive; the root-final nasal seems to have conditioned a change e > i.

12. The class V verb GEB also sometimes shows i throughout the present and in the infinitive. Holthausen (1921) ascribes this vowel to the "palatal influence" of the initial g.

13. In VII(a1) and VII(a2), preterite forms in e are the norm; ie forms are much less common, and occur only in certain manuscripts.

14. MLG e: < Pre-OS *ai, *e:, *eo

15. MLG ɛ: < Pre-OS *i, *e in open syllables

16. MLG o: < Pre-OS *o:, *au

17. MLG ɔ: < Pre-OS *u, *o in open syllables

18. MLG u < Pre-OS *o before lC. Note that we shall assume in our discussion of the modern dialects that this change is peculiar to MLG. It is very difficult to judge from the dialect grammars to what extent it is represented in the modern dialects. The situation is complicated by the fact that some of the grammars take MLG as their starting point.

19. MLG e < Pre-OS *i before rC.

20. MLG o < Pre-OS *u before rC. The same comments apply here as in n.18 above.

21. Here MLG e: < Pre-OS *eha

22. The y: here is an analogical development, on the model of class II. Note that, as a result of the phonological change mentioned in n.21, this group of verbs shares the same A alternant as class II; the analogical change can therefore be said to be based on this common A alternant.

23. MLG o, u < Pre-OS *o: before a consonant cluster, according to Lasch (1914); but for o versus u, see the discussion of the modern dialects, p.123.

24. Lasch offers two accounts for the vowel i here: it may have resulted either from the raising of e before a nasal cluster, or by the shortening of OS ie (< *e:) before a cluster.

25. Indeed, some scholars have attempted to explain the occurrence of umlauted vowels in the plural preterite indicative by phonological change. In particular, it has been claimed that umlauted was conditioned by following pronouns containing i, such as wi.

26. Except in class VI, where B, C and C~ were not three separate alternants, because B and C were identical.

27. Recall that Pre-OS *o > MLG u before lC
Pre-OS *u > MLG o before rC.

28. MDu e: < Pre-OS *ai

29. MDu ɛ: < Pre-OS *i, *e in open syllables

30. MDu o: < Pre-OS *au

31. MDu ɔ: < Pre-OS *u, *o in open syllables

32. MDu o < Pre-OS *u before LC, NC

33. MDu ie < Pre-OS *e:, *eo

34. MDu oe < Pre-OS *o:

35. The situation here is similar to that in those OS texts which show the digraph ie for the reflex of Pre-OS *e: and uo for the reflex of Pre-OS *o:.

36. The MDu o:, according to Schönfeld (1965), must have already merged with ɔ: (the result of the lengthening of o and u in open syllables), because they are freely rhymed together (unlike e: and ɛ:). Franck, on the other hand, does distinguish them, but with the qualification that neither o:/ɔ: nor e:/ɛ: are distinguished in MDu texts. One consequence of this is that it cannot be ascertained whether any levelling has occurred between B and C in classes I and II. This is also the case in MLG.

37. We mentioned in the discussion of the historical phonology that *ai has two separate reflexes in many dialects, one of which is often called "ai-umlaut" in the grammars (but see p.42), and is generally diphthongal. It is generally the other reflex which occurs in class I; this vowel is usually monophthongal. A problem arises, however, in some dialects, where only one (diphthongal) reflex of *ai is specified in the dialect grammar, but the vowel which occurs in the preterite of class I is a long monophthong. This applies to dialects 75 and 76, for example; in her grammar of these dialects, Feyer (1939) suggests that this vowel may be the reflex of *a:+umlaut, which would have been extended from classes IV and V. However, the problematic monophthongal reflexes of *ai also occur in some dialects where classes IV and V do not show *a:+umlaut in the preterite, and where this solution is therefore inapplicable. It therefore seems more likely that in the dialects concerned there are in fact two reflexes of *ai, one diphthongal and the other monophthongal, as in many other dialects; the monophthongal reflex must be rather rare, since it is not given in the dialect grammars, but it does occur in the preterite of class I (and has sometimes also spread analogically to class VII).

38. Cf. High German; this dialect is in the far South of the Low German area, and has partly undergone the second sound shift.

39. Formally speaking, within the morphological theory expounded by

Bybee and Slobin, the schema connects lexically stored forms. Note that this representation does not make reference to other forms within the paradigm; that is, it connects, say, preterite forms with other preterite forms, regardless of the corresponding present tense forms. This feature will be particularly important when we apply the schema to cases of non-proportional analogy.

40. Whether we should also expect the umlauted alternant C˜ in the 2nd singular preterite indicative is debatable; see p.167f. (chapter 5, section 2).

41. This merger only takes place in open syllables; but the alternants in question always occur in open syllables.

42. In both cases, the reflexes of Pre-OS *u and *o in open syllables remain distinct; the developments in question must be due to analogical rather than phonological change.

43. For the sake of simplicity, the sets of alternants retain the same labelling as on p.68f..

44. Though this does not mean that the later extension of umlaut to the B forms is purely a matter of levelling between B and C: the subjunctive may still have played a role. Indeed, there is evidence in some dialects to suggest that the 1st/3rd singular subjunctive forms were transferred as wholes to the indicative. See chapter 5, section 2.

45. We claimed above that it was impossible to tell whether levelling between B and C had occurred in class II in MLG, because the reflexes of Pre-OS *au and *u in open syllables were both written as o in the script. However, in these 16th century texts, the reflex of Pre-OS *u in open syllables was sometimes written as a; and the appearance of a (or, with umlaut, ä) in the preterite plural of class II therefore indicates that levelling between B and C had not occurred.

46. Note that in the southern Dutch and Flemish dialects, forms in o occur. However, this o has arisen by sound change: Pre-OS *o and *u have merged in o before labial and alveolar nasals, while before velar nasals they have merged in u.

47. This is confirmed by the fact that WERTH also shows umlaut, since fronting before rC in the West occurs only when the C is labial or velar.

48. Even when this cluster has been simplified in most forms of the paradigm (ng > ŋ, nd > n, ld > l), in many dialects it remains a cluster in word-final position, and hence in the B forms (>ŋk, nt, lt respectively).

49. It could also be the reflex of *ai in some of the dialects. This

seems, however, to be irrelevant, in that it does not permit an alternative account, for example in terms of the influence of class I. Although class I shows *ai in the B forms, it does not show this vowel in the C forms, and it is the latter with which we are at present concerned.

50. This *o has not undergone lengthening in an open syllable in class IV, as it has in the majority of dialects; in this dialect, vowels have not been lengthened in open syllables before liquids, nasals and voiceless plosives.

51. On this map, we have reverted to the convention that where a dialect shows the *expected* alternants (in this case *o: - *o:), other vowels which have merged with these alternants are not marked; thus, *au, for example, is marked only where it is distinct from *o:.

52. In the past participle, we would expect *aga rather than *aha, by Verner's law; however, in this dialect, at least, there seems to have been levelling between the A and D alternants in favour of the former.

53. It is not essential to Lasch's argument that this reflex should actually be a diphthong; it may simply have been a sufficently close vowel for the result of shortening to be u rather than o.

54. The n is the reflex of a PIE present-tense infix.

55. In the case of GANG, this element occurs only in the preterite (the present is formed from the root GA:), but this is of course the relevant form here; in the case of FA:H and HA:H, root-final n is now found throughout the paradigm (already in MLG, the expected present tense forms van, han, had largely been replaced by analogical vangen, hangen).

56. Note, however, that the u of the preterite may itself have originated by analogical change (see the discussion of III(b2) in 4.5.2). Lasch gives o as the normal preterite alternant in MLG, which she claims has arisen by the sound change

*u > o /_ rC

and it is possible that the same change also took place in the earlier stages of at least some of the dialects.

57. Plus GANG. This verb is never affected in the past participle, which, like the present tense, usually has a form deriving from the root GA:.

5 E-raising and umlaut

E-raising and umlaut, as phonological changes, were described in chapter 3. In this chapter we shall look at the alternations which arose in the verb morphology as a result of these changes. The discussion will be divided into three sections:

1. The e-raising and umlaut alternations in the present tense of strong verbs
2. The umlaut alternation in the preterite of strong verbs
3. The "Rückumlaut" alternation in certain types of weak verb (umlaut in the present tense vs lack of umlaut in the preterite and past participle)

5.1 The e-raising and umlaut alternations in the present tense of strong verbs

5.1.1 OS (a) E-raising E-raising caused an alternation between the singular indicative present, on the one hand, with endings containing the high vowels u or i, and the plural indicative present, the subjunctive present, and the infinitive on the other, with endings containing non-high vowels.[1] Class II(a), III(b), IV and V were affected:

II(a)	iu	vs	io (< Pre-OS *eo)
III(b)	i	vs	e
IV	i	vs	e
V	i	vs	e

The following OS paradigms illustrate the distribution of e-raising in the present tense:

II(a)		kiosan (KEOS)	III(b)		helpan (HELP)
		Indicative			Indicative
sg	1	kiusu	sg	1	hilpu
	2	kiusis		2	hilpis
	3	kiusid		3	hilpid
pl	123	kiosad	pl	123	helpad
		Subjunctive			Subjunctive
sg	1	kiose	sg	1	helpe
	2	kioses		2	helpes
	3	kiose		3	helpe
pl	123	kiosen	pl	123	helpen

IV		stelan (STEL)	V		sehan (SEHW)
		Indicative			Indicative
sg	1	stilu	sg	1	sihu
	2	stilis		2	sihis
	3	stilid		3	sihid
pl	123	stelad	pl	123	sehad
		Subjunctive			Subjunctive
sg	1	stele	sg	1	sehe
	2	steles		2	sehes
	3	stele		3	sehe
pl	123	stelen	pl	123	sehen

Note that there is no alternation in class III(a). Because of its root-final nasal cluster NC, class III(a) had an e-raised vowel *throughout* the present and infinitive:

III(a)		winnan (WINN)
		Indicative
sg	1	winnu
	2	winnis
	3	winnid
pl	123	winnad

		Subjunctive
sg	1	winne
	2	winnes
	3	winne
pl	123	winnen

(b) Umlaut Umlaut caused an alternation in some strong verbs between the 2nd and 3rd singular indicative present, with endings containing i and consequently an umlauted root vowel, and the rest of the present tense paradigm and the infinitive, with endings containing vowels other than i and therefore a non-umlauted root vowel. Note that the distribution of forms differs from that in the e-raising alternation, where the whole of the singular has an e-raised vowel. Umlauted vowels were not generally phonemic in OS; but the umlaut of a seems to have been phonemically distinct from a, because of merger with existing e. In any event, the umlaut of a was generally written as e in the OS orthography, and consequently class VI verbs and class VII(a) verbs, with the root vowel a, show an alternation between a and e in the present tense in written OS. For example:

VI slahan (SLAH)

		Indicative
sg	1	slahu
	2	slehis
	3	slehid
pl	123	slahad

		Subjunctive
sg	1	slahe
	2	slahes
	3	slahe
pl	123	slahen

5.1.2 MLG By MLG, the vowels of the endings had merged in -e(-) (written e), and umlauted root vowels therefore became phonemic, though they were still not consistently marked in the script. As a result, class II(b) verbs, with the A alternant ui, class VII(d) verbs, with the

A alternant a:, and class VII(c) and (e) verbs, with the A alternant o:, also acquired an umlaut alternation in the present tense. Indeed, the only strong verb classes which were now without an alternation in vowel quality in the present were class I, where the root vowel was i:, and class VII(b), with the root vowel e:.

By MLG the difference in the distribution of alternants between verbs affected by e-raising and verbs affected by umlaut had been levelled out. The verbs affected by e-raising adopted the same pattern as those affected by umlaut, in that the e-raised vowel was now restricted to the 2nd and 3rd singular indicative present:

e-raising (III(b)):

OS	helpan (HELP) -->	MLG	helpen
	Indicative		Indicative
sg 1	hilpu	sg 1	helpe
2	hilpis	2	hilpst
3	hilpid	3	hilpt
pl 123	helpad	pl 123	helpet/helpen

umlaut (VI):

OS	faran (FAR) -->	MLG	varen
	Indicative		Indicative
sg 1	faru	sg 1	vare
2	feris	2	verst
3	ferid	3	vert
pl 123	farad	pl 123	varet/varen

In classes IV and V, the alternants would have been redistributed by phonological change in MLG, because of the merger of i and e when lengthened in open syllables:[2]

e.g. V	geven (GEB)	ɛ: < e in open syllable
sg 1	geve	ɛ: < i in open syllable
2	gifst	
3	gift	
pl 123	geven	ɛ: < e in open syllable

In other classes, however, such as in III(b) illustrated above, the change must be analogical. It can be analysed in various ways.

Firstly, intraparadigmatic forces may have motivated the change: we could say that, in the verbs with an e-raising alternation, the 1st singular has adopted the vowel of the infinitive. It is worth mentioning in this regard that in passages of dialogue in our sample of Low German text (Reuter 1859), the number of infinitive forms exceeded the number of 1st singular forms by 50%. However, this account is not entirely satisfactory. The 3rd singular is even more frequent than the infinitive, so if frequency is assumed to be an important factor, we might expect the pressure on the 1st singular to retain an e-raised vowel, like the 3rd singular, to be even stronger than the pressure to adopt the infinitive vowel. Moreover, the numerous cases which we shall encounter later in this section, where the 3rd singular adopts the alternant of the 1st singular, tend to suggest that frequency is not a reliable guide to the direction of levelling, at least in the case of the person categories.

We could alternatively look at this development as an interparadigmatic change. The model would be classes IV and V (see above) and the verbs with umlaut. The direction of influence is not unexpected, as the verbs which can be analysed as the model are probably more numerous than the verbs which undergo the change:

model II(b), IV, V, VI, VII

versus II(a), III(b)

Note that this would be an abstract type of interparadigmatic analogy; the 1st singular forms of e-raising verbs would not actually be adopting the same vowel as the verbs with umlaut. Rather, the e-raising verbs would be adopting the same distribution of alternants as classes IV and V and the verbs with umlaut.

It should be remembered that there is also another alternation in the present tense of strong verbs, with the same distribution as the umlaut alternation: the alternation in vowel length (see chapter 6). This alternation is found in all strong verbs except classes III and VII(a) (with root-final consonant clusters). When this alternation is taken into account, the number of verbs which could serve as a model for

the redistribution of alternants in e-raising verbs becomes even larger; for example, it includes class I, with i: versus i. Moreover, class II(a), one of the e-raising classes which undergoes the analogical change, also shows the alternation in vowel length. Consequently, before the redistribution of e-raising alternants, there would have been *three* different alternants in the present tense of strong verbs:

e.g. class II(a)

inf/pl	[+long] [-raised]	e:	< OS io
sg 1	[+long] [-raised]	*y:	< OS iu
sg 2/3	[-long] [+raised]	y	< OS iu shortened /_ CC

In this case, the adoption of the infinitive alternant by the 1st singular represents a reduction in the total number of alternants within the present tense.

5.1.3 MDu In MDu only a few strong verbs show e-raising or umlaut alternations. This can partly be accounted for in terms of sound change: as we mentioned earlier, long vowels tend not to develop distinctive umlauted variants in Dutch and Flemish, especially in the West. In some verb classes, however, levelling must have taken place: both the widespread alternation a - e and the e-raising alternation have been severely restricted. The details about umlaut in MDu are given by Franck (1910). It appears that the alternation is more tenacious in the more easterly dialects of Brabant and Limburg, and that some verbs have relic forms with umlaut:

cl.IV	breken	(BREK)	-	3rd singular brict
cl.V	gheven	(GEB)	-	3rd singular ghift
cl.VI	draghen	(DRAG)	-	3rd singular draghet/dreghet (relic)
	slaen	(SLAH)	-	3rd singular slaet/sleet (relic)

These relics are limited to very frequent verbs; here umlaut seems to have been able to survive despite the disintegration of umlaut in general. Franck also suggests that, in the case of slaen, the fairly common relic form sleet may have been supported by the analogy of the 3rd singular form steet of the isolated verb staen (STA:). In the verb

draghen, the alternation has sometimes been eliminated by the extension of the umlauted vowel to the infinitive and the 1st singular: dreghen, dreghe. Similar forms of the corresponding verb are also very common in MLG.

5.1.4 Modern dialects Most of the modern dialects preserve the umlaut alternation at least in some strong verbs. Only a few dialects in the West of our area have eliminated it completely: 51 (Zuidoostvlaanderen), 53 (Westvlaanderen), 54 (Antwerp), 55 (Schouwen-Duiveland), 56 (Overflakkee), 57 (Oud-Beierland), 59 (Waterland) and 60 (Drechterland). In all these dialects, some long vowels were not affected by umlaut, and the process did not become so entrenched in the morphology as in other dialects (for example, it is not found in the plural of nouns). They continue the trends seen in MDu: both e-raising and the alternation a - e have been levelled out, generally in favour of the non-e-raised/ non-umlauted alternant of the 1st singular, infinitive and plural (that is, in the terminology of chapter 4, the A alternant).

It is interesting to note that in the more northerly dialects of this group - 55, 56, 57, 59 and 60 - there are no alternations at all in the present tense of strong verbs: there is no alternation in vowel length (see the discussion in chapter 6). In the more southerly dialects - 51, 53, and 54 - there *is* an alternation in vowel length, but it applies equally to strong and weak verbs (including the major weak formation). Consequently, in all these dialects, the present tense of strong verbs is no different from that of the major formation.

In the dialects which have preserved e-raising and umlaut, the extent to which the alternations are retained varies considerably from dialect to dialect. In most Dutch dialects, the Belgian dialects west of Limburg, the NLS dialects south of Schleswig-Holstein, and some Eastern dialects, only isolated cases of preservation are found. In East- and Westphalia, Limburg, a few Eastern Dutch dialects, Schleswig-Holstein, and some Eastern dialects, on the other hand, the alternations are more widespread. However, it is possible to make some generalisations.

Firstly, when levelling takes place, it is almost always in favour of the non-e-raised/non-umlauted vowel of the 1st singular, infinitive and plural (the A alternant). This direction is contrary to what we would expect on grounds of frequency: the 3rd singular is by far the most frequent form in the paradigm (see the data in chapter 2). However, it would be expected according to Mayerthaler's theory of markedness, according to which the 1st person is least marked.

Generalisations can also be made across dialects with respect to the different classes of strong verbs. The most striking fact is the almost complete lack of e-raising in class III(b). Even in dialects which have otherwise retained e-raising and umlaut in most strong verbs, class III(b) is conspicuous is having levelled the alternation out. Only some Westphalian and Limburgian dialects have preserved it, and then only in a subset of III(b) verbs (the precise membership of the subset varies from dialect to dialect). The question therefore arises, what is special about class III that causes it to level out e-raising more than the other classes? A possible answer is that the present tense of class III (as a whole) is set apart from most other strong verbs by its "immunity" to alternations in vowel length. This "immunity" results from the fact that class III verbs have the root structure (C)CVCC (at least originally). Consequently, neither the lengthening of short vowels in open syllables nor the shortening of long vowels before consonant clusters could introduce an alternation in vowel length into the present tense of class III. The lengthening of short root vowels in open syllables could not apply, because all the root syllables in the paradigms of class III verbs were closed; and the shortening of originally long vowels before clusters could not apply, because class III had short root vowels.

In most other strong verbs, these phonological changes did introduce an alternation in vowel length in the present tense. The following pattern became established:

inf/sg 1/pl [+long]

sg 2/3 [-long]

Note, moreover, that the distribution of forms coincides with that of the e-raising (at least since MLG) and umlaut alternations, where applicable:

inf/sg 1/pl [-raised/-umlaut]

sg 2/3 [+raised/+umlaut]

Consequently, class III(b) differed from most other strong verb classes, in that the e-raising alternation was not accompanied by an alternation in vowel length. This isolation may have caused III(b) to adopt the alternative present tense pattern available in the verb system as a whole: the pattern of the major formation, with no alternation in either the quality or the quantity of the vowel.

Some class VII(1) verbs also tend to level out the expected alternation in vowel quality (in this case due to umlaut rather than e-raising as in class III(b)) within the present tense. This phenomenon lends support to the account suggested above for the levelling in class III(b), because the class VII(1) verbs in question have a similar root structure to class III: CVCC. As in class III, then, no alternation in vowel length can arise in the present tense of these verbs, and consequently they too differ from the majority of strong verbs. It is significant that the verb HALD frequently diverges from other class VII(1) verbs. In many dialects, this verb now shows an alternation in vowel length within the present tense, unlike other VII(1) verbs, but like most other strong verbs. This is due to the early lengthening of vowels before the cluster ld, followed by syncope and shortening in the 2nd and 3rd singular. Correspondingly, HALD also retains the umlaut alternation. The coincidence of these two alternations can be seen in the forms of dialect 22 (Dingelstedt):

sg 1 huole

sg 3 hølt

The lack of umlaut in the verbs which we have called class VII(1) has also been noted by Katara (1939). He rejects Lasch's (1914)

phonological account, which states that the lack of umlaut in these cases is due to the intervention of two consonants between the root vowel and the potential conditioning environment. He prefers an explanation in terms of analogical levelling, suggesting that the vowel of the past participle, a, may have favoured the extension of a throughout the present tense paradigm, and also noting that the number of strong verbs with the root vowel a is not as great as the number of weak verbs with this root vowel. Neither of these factors, however, explains why umlaut was levelled out in these verbs much more frequently than in other class VII verbs, nor why HALD tends not to show levelling where it also has an alternation in vowel length. Our line of argument, on the other hand, can provide an account for these facts.

The levelling in class III(b) and VII(i) is the most obvious feature about umlaut in the present tense in the modern dialects; but various other trends can also be discerned. In some NLS, Eastern and Westphalian dialects, at least some class IV and V verbs have levelled out e-raising; and in the NLS and some Eastphalian dialects, class II(b) verbs have tended to level out umlaut. It is not clear why levelling is particularly common in these two groups of verbs. In many cases it appears that only partial levelling is involved. The e-raising or umlaut alternation has been levelled out, in favour of the non-e-raised/non-umlauted vowel, but an alternation in vowel length remains within the present tense. In other words, the expected "compound" alternation:

inf/sg 1/pl [+long] [-raised/-umlaut]
sg 2/3 [-long] [+raised/+umlaut]

has been replaced by a simple alternation in vowel length. This can be exemplified from class IV (STEL) in dialect 32 (Gütersloh):

sg 1 ste:ale (e:a < *e in open syllable)
3 stelt for expected *stilt

and from II(b) (SLU:K) in dialect 22 (Dingelstedt):

sg 1 slu:ke

3 slukt for expected *slykt

In both cases, there is an alternative possibility to partial levelling: the levelling out of e-raising/umlaut may have taken place before the phonological changes which introduced the alternation in vowel lengthening. However, there is no evidence in MLG of such early levelling (at least, there is no evidence in classes IV and V; in class II(b), levelling would not be observable, because of the sporadic marking of umlaut).

Although levelling is quite common in classes IV and V, the verbs NEM (IV), GEB (V) and SEHW (V) tend to retain e-raising even when the rest of their class have levelled it out, and even in dialects which have in general levelled out e-raising/umlaut. The high frequency of these verbs would seem to be a major factor here. The verb KUM, which is also very frequent, shares this tendency in many dialects. In a few Eastphalian and NLS dialects, however, KUM tends to show levelling even when other class IV verbs do not; that is, it manifests the opposite tendency. The different behaviour of KUM here may be due to its exceptional root structure, with the reflex of *u in the infinitive/1st singular/plural present rather than *e as in other class IV and V verbs (consequently, the expected alternation in KUM is due to umlaut, whereas in other class IV and V verbs it is due to e-raising). It is notable that the dialects in question are a subset of those which have levelled out umlaut in class II(b). Since KUM has the same root vowel as class II(b) in the 2nd and 3rd singular (expected *y, replaced by u), it is possible that KUM may have been influenced by the class II(b) verbs.

In class VI, the very frequent verb SLAH tends to retain umlaut when other verbs have levelled it out. In addition, a similar trend to the one observed in class III(b) and VII emerges: the two verbs WAHS and WASK (and BAKK where it is still strong), with original root-final clusters and consequently no alternation in vowel length, tend to level out umlaut more than the other verbs of the class.

Although we claimed at the beginning of this section that levelling is usually in favour of the non-e-raised/non-umlauted vowel of the 1st singular/plural/infinitive, there are a few cases where levelling has proceeded in the opposite direction. It is again class III(b) verbs with root-final lC which are mainly affected, and especially those with a root-final cluster of l plus a dental plosive (for example, the verb SMELT). The verbs of class III(a), with a root-final nasal cluster and consequently i throughout the present tense and infinitive, can be analysed as a model for this development: after the change, those class III(b) verbs with root-final lC also have i throughout. The phenomenon is restricted to the northern Eastphalian dialects (21, 22, 23 and 26), the Belgian dialects 49 (Aarschot) and 54 (Antwerp), and the Rhineland dialects 36 (Mülheim) and 41 (Remscheid). The question arises, why class III(b) verbs in rC never undergo this change. We might account for this by the fact that the cluster rC has usually conditioned changes in preceding vowels, so that these verbs no longer show the alternant i in the 2nd and 3rd singular. They therefore have no point of contact (at least within the present tense) with class III(a). In addition, since preconsonantal r has usually been vocalised, these verbs no longer share the characteristic root-final nasal or liquid cluster of most class III verbs.

Another possible case of levelling in favour of the alternant of the 2nd and 3rd singular concerns the verb GEB in some Westphalian dialects, where the whole of the present tense and the infinitive have a vowel which is the reflex of i. However, this phenomenon seems to date back to OS, where the infinitive had the alternative forms geban and giban, and the i here has been explained phonoloigcally; see, for example, Holthausen (1886), who ascribes it to the "palatal influence" of initial g.

The northern Eastphalian dialects have frequently extended the umlauted vowel of the 2nd and 3rd singular throuhgout the present tense and infinitive in one or both of the classs VII verbs HA:H and FA:H. Some dialects further to the East also have e throughout the present and

the infinitive in these verbs. However, in the case of HA:H, a weak verb HENGJ with a similar meaning has existed alongside the strong verb, and the apparent extension of e may be due to confusion between the two verbs.

In the southern Westphalian dialect 39 (Lüdenscheid), the umlauted vowel of the 2nd and 3rd singular has been extended to the plural present in just those verbs where the plural shows a short vowel, like the 2nd and 3rd singular (cf. p.210). Consequently, in these verbs, the present plural has become identical to the 3rd singular. The verbs involved are ones with root-final t. This can be illustrated from class II (a) (GEOT):

sg 1 ɣaitə
3 ɣyt
pl 123 ɣyt

In dialect 62 (Grave), the umlauted vowel of the 3rd singular has sometimes been extended to the 2nd singular/plural and the imperative singular/plural. Note here that the "old" 2nd singular form (with the ending -st), where umlaut would have been historically justified, had previously been replaced by the 2nd plural form (with the ending -t), where umlaut would not be expected; the imperative form is the reflex of the imperative plural, which is identical to the 2nd plural present.

In dialect 58 (Culemborg), the 3rd singular form has completely replaced the 1st and 2nd singular forms, and the umlauted vowel, where retained by the 3rd singular, has consequently been extended to the whole of the present singular.

In the preceding few paragraphs we have dealt with fairly isolated cases of extension of e-raised/umlauted vowels to forms of the paradigm where they would not be expected by phonological change. We shall now turn to the extension of such vowels to the imperative singular of some strong verbs, which is a relatively common and widespread phenomenon, and is of considerable age (note that the imperative singular of strong verbs originally had no ending, and umlaut

cannot therefore have arisen by phonological change). Many dialects show forms with an e-raised vowel in classes IV and V, and in particular in the verbs NEM (IV) and GEB (V). This would suggest that we are dealing with the relics of a phenomenon which was once more widespread in the strong verb system. We have seen before that these highly frequent verbs tend to retain old forms when other verbs of their class have modified the corresponding forms on the basis of other forms of the paradigm. The hypothesis that the umlauted imperatives of NEM and GEB are relics is confirmed by the evidence from OS and MLG, where, in classes IV and V, the imperative had forms in i alongside forms in e. Of course, in OS the 1st singular also contained i, in addition to the 2nd and 3rd singular, so that there was even more pressure on the imperative singular to adopt the root vowel i rather than original e. Indeed, the pressure of the present indicative singular on the imperative singular can also be seen in classes II(a) and III(b). The OS strong verb system in the present indicative and the imperative singular was as follows:

	I	dri:ban (DRI:B)	II(a)	kiosan (KEOS)
		Indicative		Indicative
sg	1	dri:bu	sg 1	kiusu
	2	dri:bis	2	kiusis
	3	dri:bid	3	kiusid
pl	123	dri:bad	pl 123	kiosad
		Imperative		Imperative
sg		dri:f!	sg	kios!,kius!

II(b) su:gan (SU:G)

Indicative

sg	1	su:gu
	2	su:gis
	3	su:gid
pl	123	su:gad

Imperative

sg	su:g!

III(b) werpan (WERP)

Indicative

sg	1	wirpu
	2	wirpis
	3	wirpid
pl	123	werpad

Imperative

sg	werp!,wirp!

V sehan (SEHW)

Indicative

sg	1	sihu
	2	sihis
	3	sihid
pl	123	sehad

Imperative

sg	seh!,sih!

III(a) winnan (WINN)

Indicative

sg	1	winnu
	2	winnis
	3	winnid
pl	123	winnad

Imperative

sg	win!

IV stelan (STEL)

Indicative

sg	1	stilu
	2	stilis
	3	stilid
pl	123	stelad

Imperative

sg	stel!,stil!

VI slahan (SLAH)

Indicative

sg	1	slahu
	2	slehis
	3	slehid
pl	123	slahad

Imperative

sg	slah!

VII(a)	haldan (HALD)	VII(b)	sla:pan (SLA:P)
	Indicative		Indicative
sg 1	haldu	sg 1	sla:pu
2	heldis	2	sla:pis
3	heldid	3	sla:pid
pl 123	haldad	pl 123	sla:pad
	Imperative		Imperative
sg	hald!	sg	sla:p!

VII(c)	he:tan (HAIT)	VII(d)	hlo:pan (HALUP)
	Indicative		Indicative
sg 1	he:tu	sg 1	hlo:pu
2	he:tis	2	hlo:pis
3	he:tid	3	hlo:pid
pl 123	he:tad	pl 123	hlo:pad
	Imperative		Imperative
sg	he:t!	sg	hlo:p!

It can be observed that the imperative vowel differs (optionally) from the infinitive vowel in precisely those clases where the alternation within the present is due to e-raising rather than umlaut: II(a), III(b), IV and V. We may hypothesise that the development of doublets in the imperative, due to pressure from the present indicative singular, occurred quite early, after e-raising but before umlaut.

In MLG, the imperative singular tended to retain its analogical e-raised vowel, at least in classes IV and V; though Lasch (1914) remarks that in class II(a) the vowel e: (corresponding to OS io) is more common than y: (corresponding to OS iu). Note that in this respect, the imperative differs from the 1st singular, which always loses its (historically justified) e-raised vowel in MLG. Of the modern dialects, only a few on the border between West- and Eastphalia retain imperative forms with a reflex of OS iu in class II(a). In classes IV and V, also, there is a general tendency for the imperative singular to show the non-e-raised vowel shared by the 1st singular, the plural present and the infinitive, but this has been less thorough than in

class II(a), and has generally left certain verbs unaffected, as mentioned above. It is interesting that even where the imperative shows a non-e-raised vowel in classes IV and V, it has not retained the expected development of, for example, OS sprek!. Rather, it has adopted the long vowel of the 1st singular/plural/infinitive. Across dialects, then, there is a contrast between forms such as

sprik! [-long] [+raised]

with the same vowel as the 2nd and 3rd singular present, and forms such as

spre:k! [+long] [-raised]

with the same vowel as the 1st singular and plural present and the infinitive. Rarely does the imperative have a distinct, independent alternant.

5.2 The umlaut alternation in the preterite of strong verbs

5.2.1 From OS to MLG The endings of the preterite subjunctive contained the vowel -i(-) in OS:

Class III: helpan (HELP)

Preterite subjunctive

sg	1	hulpi
	2	hulpis
	3	hulpi
pl	123	hulpin

As a result, the preterite subjunctive forms developed an umlauted root vowel (u > y), which by MLG can be analysed as phonemically distinct from u. The number of alternants within the paradigm of strong verbs was thereby increased, as the alternant of the preterite subjunctive (which we may call C^) was now distinct from the C alternant as found in the preterite indicative plural:

Preterite indicative

pl	123	hulpun

Note that the remaining form containing a C alternant - the 2nd singular preterite indicative - patterned with the preterite subjunctive in OS (and in general in the WGmc languages), in having the ending -i:

Preterite indicative

sg	2	hulpi

We would therefore expect the root-vowel u to undergo umlaut in this environment. The 2nd singular indicative does indeed show an umlauted vowel in MLG; but whether it is to be attributed to a straightforward phonological development, from the OS form in -i, or whether it is of analogical origin (from the preterite subjunctive) is uncertain. The doubt arises for two reasons. Firstly, the ending of the 2nd singular indicative in MLG is not the expected reflex of OS -i (which would have been MLG *-e, where e represents [e]). Rather, this form shows the ending -es(t), of which the -s(t) element, at least, has been adopted analogically from other 2nd singular forms in the paradigm. Secondly, in MLG, not only do the 2nd singular indicative and the subjunctive preterite show an umlauted root vowel, but also the indicative plural,

where it must clearly be an analogical rather than a phonological development. It is therefore debatable whether the umlauted vowel of the 2nd singular is due to the OS -i ending, or whether it has been imported from the subjunctive.

A priori, it is perfectly possible that when the OS ending -i was replaced by MLG -est, the umlauted vowel remained. There are two possible sequences of events which could have resulted in the retention of the umlauted vowel:

(i) OS hulpi >> *hylpis(t)
> MLG hylpes(t)

(ii) OS hulpi > *hylpe (y now phonemic)
>> MLG hylpes(t)

The first possibility seems particularly likely in view of the fact that the 2nd singular ending of both the present indicative and the preterite subjunctive of strong verbs is -is in OS.

Lasch (1914), however, opts for an analogical origin of the umlauted vowel in the 2nd singular indicative. She does not adduce any data to support this view. If early 2nd MLG singular forms such as *brakest, with a non-umlauted root vowel, could be found it would be clear that the umlauted vowel of the more usual MLG form brekest was an analogical development, like that of the indicative plural. But although Lasch does cite early MLG plural forms such as braken, she does not cite any potentially crucial 2nd singular indicative forms such as *brakest. Her case therefore remains unproven.

5.2.2 Modern dialects We should first point out one general feature: when the preterite indicative undergoes interparadigmatic change (as described in chapter 4), the preterite subjunctive is usually also affected. For example, when the preterite indicative of class IV verbs adopts the alternant of class II, the preterite subjunctive also adopts the corresponding class II alternant. A counterexample is found in dialect 45: the subjunctive of most class IV verbs has changed in line with the indicative, adopting the preterite subjunctive alternant of

class II; but some highly frequent verbs - NEM and KUM - have retained the old class IV subjunctive vowel.

Let us look now at the distribution of preterite alternants within paradigms. Four patterns can be distinguished (which may co-exist within a single dialect, in different verb classes):

(i)	ind sg 13[3] alternant	≠	ind sg 2, pl 123 alternant	≠	subj alternant
(ii)	"	≠	"	=	"
(iii)	"	=	"	≠	"
(iv)	"	=	"	=	"

System (i), with a three-fold distinction, is found only in a very few dialects: 7, optionally in 23, and in some verbs in 28. Here the umlauted subjunctive alternant has not spread into the indicative, and neither has there been levelling within the indicative.

System (ii) is that found in MLG, and is preserved in many West- and Eastphalian dialects, and in a few Eastern dialects: the C forms of the indicative show the umlauted alternant of the subjunctive, and this has remained distinct from the B alternant. Note that, as we discussed above, the umlauted vowel in the 2nd singular indicative may have developed by phonological change, but that of the plural indicative must be of analogical origin, from the subjunctive, and possibly the 2nd singular indicative. The markedness relationship between the preterite indicative and subjunctive was discussed in chapter 2. Cross-linguistically, the indicative mood is generally unmarked. However, as there is no present subjunctive in our dialects, it is not clear that the categories which we have called "preterite indicative" and "preterite subjunctive" are in a two-way opposition of unmarked versus marked. Rather, the "preterite subjunctive" could be analysed as a general subjunctive form. Both the preterite indicative and the general subjunctive might be analysed as marked with respect to the present indicative:

Present indicative (unmarked)	vs	General subjunctive (marked)
vs		
Preterite indicative (marked)		

but the relationship between them cannot be precisely determined (as we pointed out in chapter 2, the Reuter text does not give us any reliable information about the frequency of the two categories). At least, then, it remains unclear whether this is an example where the direction of analogical change goes counter to markedness relationships.

There are a few cases in systems of type (ii) where the vowel of the C and C˜ forms is not the expected reflex of the C˜ alternant. In Lüdenscheid, for example, there has been partial levelling between B and C˜:

*au *u+umlaut >> *au *au+umlaut

The subjunctive retains its characteristic umlauted vowel, but has been partially influenced by the B alternant.

System (iii) is found in two Eastern dialects (11 and most verbs in 7), in two southern dialects (24 and 30) and in the Rhineland dialects. Here, levelling has taken place between B and C, usually in favour of the C alternant (which is also shared by the past participle). The whole of the preterite indicative has a non-umlauted vowel while the subjunctive retains an umlauted vowel. Usually, because of the direction of levelling within the indicative, the vowel of the subjunctive is the umlauted equivalent of the indicative vowel. In the Rhineland dialects, the loss of the 1st/3rd singular subjunctive ending -e means that the umlaut is the sole distinguishing mark of the subjunctive.

System (iv) is, strictly speaking, found only in dialect 72. Here the umlauted vowel of the subjunctive has spread throughout the indicative, but the indicative and subjunctive still remain distinct because of the retention of final -e in the subjunctive. There are many Eastern, NLS and Dutch dialects where the distinction between the

preterite subjunctive and the preterite indicative of strong verbs has been completely eradicated. Note that in most weak verbs (except those where the medial vowel had been lost already in OS; see the next section), and in particular in the major weak formation, the distinction between the preterite subjunctive and indicative had already been lost in MLG, because of phonological change. It is perhaps not surprising that a distinction which was not observed in the majority of verbs should have been completely eliminated; though it must be remembered that a considerable number of Westphalian, Eastphalian and Rhineland dialects retain the distinction in the strong verbs despite this. In some cases, new periphrastic subjunctive forms have developed; in other cases, the single set of forms seems to fulfil the functions of both the old preterite indicative and the preterite subjunctive.

In the Dutch and some Eastern and NLS dialects, the single remaining preterite paradigm shows the non-umlauted vowel of the old indicative paradigm. In the remaining Eastern and NLS dialects, on the other hand, it is the umlauted vowel of the preterite subjunctive paradigm which has survived. This seems to be an extension of the phenomenon observed in MLG and preserved in many Westphalian, Eastphalian and a few Eastern dialects, where the 2nd singular and the plural indicative show an umlauted vowel; the same comments relating to the markedness relations between the indicative and subjunctive apply. It may be observed that we could alternatively postulate that the 2nd singular and plural indicative influenced the 1st/3rd singular. This account, however, is also problematic in terms of markedness relations; and it should be pointed out that there are <u>no</u> cases in our data where we are forced to accept this direction of development (there are always alternative analyses involving, for example, the past participle alternant, or the influence of another strong verb class).

In these dialects with umlaut throughout the single preterite paradigm, the umlauted vowel is not necessarily the direct reflex of the C$^{\sim}$ alternant. For example, nearly all of those Eastern and NLS dialects with an umlauted vowel throughout the preterite show the reflex

of *au+umlaut, rather than the old C~ alternant *u+umlaut, in the preterite of class II. (cf. the situation described above in dialect 39, which shows the alternation *au - *au-umlaut). The various sequences of development that might have given rise to this alternant were discussed in chapter 4, and will not be discussed again here.

On the other hand, there is evidence in some dialects that the remaining single preterite paradigm shows not only the umlauted vowel of the subjunctive, but the actual reflexes of the old subjunctive forms. For example, in dialects 15 and 16, final -e has been lost, but word-final consonants have not been devoiced if they were previously followed by -e (this perhaps suggests that the loss of -e occurred fairly soon before the relevant dialect grammars were written). Thus, as the preterite paradigm shows forms with a word-final voiced consonant, these must derive from old subjunctive forms with the ending -e, as the writers of the grammars point out.

We therefore seem to be dealing with the *replacement* of the indicative forms by the subjunctive forms, rather than the analogical remodelling of the indicative on the subjunctive (for a similar phenomenon of wholesale replacement of forms, see Vincent 1980). Note that, in many cases, system (ii) above can also be said to have arisen by the replacement of the 2nd singular and the plural indicative forms by the corresponding subjunctive forms, (though in some dialects a distinction is still made between the 2nd singular indicative and subjunctive in the ending: -st versus -est respectively). This provides an alternative way of accounting for these cases of levelling in favour of the subjunctive. We can use an argument proposed by McLintock (1961) with reference to the replacement of the present indicative of modal verbs by subjunctive forms in the plural. He suggests that the indicative and subjunctive may first have become equivalent in meaning, and hence interchangeable variants. There is some evidence of a similar stage in our sample of text from Reuter, in which the distribution of indicative and subjunctive forms does not seem to correspond to any distinction in meaning. Once this has happened, we can no longer talk

of markedness relations between the categories expressed by the forms, since they now both express the same category. Consequently, the forms previously associated with *either* of the two categories may come to predominate. The only difficulty with this account is that we would perhaps expect a trace of the earlier markedness relations between the sets of forms to remain after they had become equivalent; we might, for example, expect them to differ in frequency.

5.3 The "Rückumlaut" alternation in certain types of weak verb (umlaut in the present tense versus lack of umlaut in the preterite and past participle)

The alternation between an umlauted vowel in the present tense and a non-umlauted vowel in the preterite and past participle consitutes one of the main characteristics of the minor types of weak verbs in the modern dialects (the other important characteristic is an alternation in vowel length). It therefore seems appropriate to discuss here the whole issue of the weak verb classes, and their development from Proto-Germanic to the modern dialects. It follows that some of what is said here will not be directly relevant to Rückumlaut, but will provide some of the background for the discussion of the alternation in vowel length in chapter 6.

5.3.1 From PGmc to OS There were originally four classes of weak verbs in Germanic, each with a characteristic stem formative between the root and the tense/person/number suffixes (see, for example, Krahe 1969):

I	ja (or i in some forms of the paradigm)
II	o:
III	ai/e:
IV	no:

These classes may be illustrated by the following Gothic verbs (the Gothic examples here and throughout are from Braune (1973)):

I	nasjan	Pret sg 13	nasida
II	salbo:n	Pret sg 13	salbo:da
III	haban	Pret sg 13	habaida
IV	fullnan	Pret sg 13	fullno:da

There was also a small number of verbs in which the preterite and the past participle were formed by adding the dental tense suffix directly to the root of the verb, without an intervening stem formative. This formation must have been very old, as the consonant alternations in these verbs are the reflex of a Pre-Gmc alternation. These verbs are

represented in Gothic by:

thaqkjan	Pret sg 13	tha:hta
thuqkjan	Pret sg 13	thu:hta
waurkjan	Pret sg 13	waurhta
bru:kjan	Pret sg 13	bru:hta

We can also reconstruct, for PGmc:

*kaupjan	Pret sg 13	*kaufto:
*so:kjan	Pret sg 13	*so:hto:

and probably others. These six verbs all have a j-formative in the present tense; there was in addition one verb of this type which formed the present tense without a stem formative (in other words, it resembled the majority of strong verbs in the present tense):

Gothic briqqan Pret sg 13 bra:hta

In OS the number of weak verb classes had been considerably reduced. As in all the West Germanic languages, the no:-stem class had been lost; and only three verbs - hebbian "have", libbian "live" and seggian "say" - still had e:-stem forms. These three verbs followed the ja-stem class in most of their forms (including the quoted infinitive forms), but retained e:-stem forms in the 2nd and 3rd singular present indicative (note the consequent lack of umlaut in these forms) and in the 2nd singular imperative). The present tense forms of hebbian and seggian are as follows:

hebbian (habbian) (HABE: >> HEBBJ)

		Present indicative			Present subjunctive
sg	1	hebbiu (habbiu)	sg	1	hebbie (habbie)
	2	habes		2	hebbies (etc.)
	3	habed		3	hebbie
pl	123	hebbiad	pl	123	hebbien

Imperative

sg	2	habe!
pl	2	hebbiad!

seggian (SAGE: >> SEGGJ)

		Present indicative			Present subjunctive
sg	1	seggiu	sg	1	seggie
	2	sagis		2	seggies
	3	sagad		3	seggie
pl	123	seggiad	pl	123	seggien

Imperative

sg	2	saga!
pl	2	seggiad!

The preterite and past participle of these verbs have adopted forms resembling the corresponding forms of the ja-stem verb, LEGGJ: ha(b)da, giha(b)d; sagda, gisagd. This formation will be discussed below.

While on the one hand some of the PGmc weak verb classes were lost in OS, on the other hand new classes arose, as phonological change led to differentiation within the ja-stem class. The class was split according to the length of the root syllable: verbs with a short root syllable, ending in -VC, versus verbs with a long root syllable, ending in -V:C(C) or -VCC. The phonological change which led to the split was the loss of the (unstressed) vowels of medial syllables after a long initial syllable. This caused the -i- formative of the preterite stem, and of the inflected form of the past participle,[4] to be dropped in verbs with a long root syllable. The effects of this change can be seen by comparing Gothic and OS forms:

long root syllable:

Go	hausjan	Pret 13	hausida	
OS	ho:rian	Pret 13	ho:rda	-i- lost

short root syllable

Go	nasida	Pret 13	nasida	
OS	nerian	Pret 13	nerida	-i- retained

This phonological change had the further consequence that, while the root vowels of the present tense and of the uninflected past participle were affected by umlaut, conditioned by j or i of the following syllable, the root vowels of the preterite indicative and of the

inflected past participle could not be affected in these long root verbs, because the conditioning environment for umlaut was no longer present. In ja-stem verbs with a short root syllable, on the other hand, all the forms were affected by umlaut.

A sub-class of the ja-stem verbs therefore emerged, with two peculiarities: (i) the preterite and the inflected past participle was formed by adding the dental suffix directly to the root; and (ii) there was a root-vowel alternation (known as "Rückumlaut") between the present tense and the uninflected past participle on the one hand, and the preterite tense and the inflected past participle on the other (the vowel alternations, however, apart from e - a, are not usually apparent in OS, because the umlaut of vowels other than a was not marked). These features can be viewed as peculiarities both in relation to the other ja-stem verbs and in relation to the other main group of weak verbs, the o:-stems. Both of these groups had a medial vowel between the root and the preterite ending, and retained the same root vowel throughout the paradigm.

At first, these differences in conjugation were entirely predictable from the phonological structure of the root. By OS, however, this was no longer the case. The old distinction between long and short root syllables had been obscured by another phonological change: the gemination of consonants (except r) between a preceding short vowel and a following j. This caused the root-final consonants of ja-stem verbs with a short root vowel to be geminated before the stem formative -j-. As a result of this gemination, all the ja-stem verbs which had formerly had a short root syllable, except those with root-final r, now had a long root syllable. In other words, from a synchronic point of view within OS, ja-stem verbs with the root structure -VCC could either have syncope and "Rückumlaut" in the preterite (if the final CC was of long standing), or could retain the medial vowel and have the same vowel throughout the paradigm (if the CC was a result of recent gemination). Ja-stem verbs with the root structure -V:C, on the other hand, always had syncope in the preterite

(and phonetically, they probably had the Rückumlaut alternation, though this was not apparent in the script, because umlaut in the present tense was not marked). Syncope and Rückumlaut, therefore, were predictable for verbs in -V:C, but not for verbs in -VCC, and there is evidence that this led to some realignment: certain old short-root verbs adopted the conjugation with syncope and Rückumlaut, for example OS leggian (LEGGJ), settian (SETTJ) and also the old e:-stem verbs hebbian (HABE: >> HEBBJ) and seggian (SAGE: >> SEGGJ). The verbs which do this are ones which would probably have been in very frequent use.

We have not so far mentioned the preterite subjunctive in verbs with a Rückumlaut alternation. We would expect an umlauted vowel here, because of the vowel -i(-) in the ending *following* the dental suffix (-di, -dis, -din). This is the situation found in MLG and in those modern dialects which preserve preterite subjunctive forms. However, in OS, the preterite subjunctive generally shows a non-umlauted vowel in cases where umlaut is marked; that is, it shows a rather than e. Holthausen attributes this to analogical levelling between the preterite subjunctive and indicative, in favour of the latter. Occasional subjunctive forms with the root vowel e do occur, but Holthausen associates them with preterite *indicative* forms in e, where the e has been adopted analogically from the present tense. It is interesting that the alternation a - e has undergone levelling while its phonological conditioning is still present. Hogg (1979) suggests that alternations can only be levelled out when they are no longer governed by synchronic phonological rules. However, because of the merger of a-umlaut with existing e, the "umlaut rule" for a is opaque to the extent that there are instances of e *other* than in the umlaut environment (this is the second sense of opacity as defined by Kiparsky (1978)). We might therefore suggest that this kind of opacity could lead to the loss of a synchronic phonological rule, and hence to the possibility of analogcial levelling.

The following OS paradigms illustrate the features mentioned in the preceding paragraphs. Together with the old e:-stems discussed

above and on p.176f., they make up the OS weak verb system in its entirety.

(a) o:-stems: e.g. makon (/makoian) (MAKO:)[5]

		Present indicative			Present subjunctive
sg	1	makon	sg	1	mako (/makoie)
	2	makos		2	makos
	3	makod		3	mako (/makoie)
pl	123	makod (/makoiad)	pl	123	makon (/makoian)
		Preterite indicative			**Preterite subjunctive**
sg	1	makoda	sg	1	makodi
	2	makodes		2	makodis
	3	makoda		3	makodi
pl	123	makodun	pl	123	makodin
		Imperative			**Past participle**
sg	2	mako!			gimakod(-)
pl	2	makod! (/makoiad!)			

(b) ja-stems with the root structure -VCC, where CC is the product of gemination (no syncope, no Rückumlaut): e.g. *(ant)swebbian "go to sleep"

		Present indicative			Present subjunctive
sg	1	swebbiu	sg	1	swebbie
	2	swebis		2	swebbies
	3	swebid		3	swebbie
pl	123	swebbiad	pl	123	swebbien
		Preterite indicative			**Preterite subjunctive**
sg	1	swebida	sg	1	swebidi
	2	swebides		2	swebidis
	3	swebida		3	swebidi
pl	123	swebidun	pl	123	swebidin
		Imperative			**Past participle**
sg	2	swebi!			giswebid(-)
pl	2	swebbiad!			

(c) ja-stems with the root structure -VCC, where the CC is of older origin (syncope and Rückumlaut): e.g. wendian (WENDJ)

		Present indicative			Present subjunctive
sg	1	wendiu	sg	1	wendie
	2	wendis		2	wendies
	3	wendid		3	wendie
pl	123	wendiad	pl	123	wendien
		Preterite indicative			Preterite subjunctive
sg	1	wanda	sg	1	wandi
	2	wandes		2	wandis
	3	wanda		3	wandi
pl	123	wandun	pl	123	wandin
		Imperative			Past participle
sg	2	wendi!			giwendid, giwand-
pl	2	wendiad!			

(d) ja-stems with the root structure -VCC, where CC is the product of gemination, but which behave as though CC were of older origin (i.e. syncope and Rückumlaut): e.g. leggian (LEGGJ).

		Present indicative			Present subjunctive
sg	1	leggiu	sg	1	leggie
	2	legis		2	leggies
	3	legid		3	leggie
pl	123	leggiad	pl	123	leggien
		Preterite indicative			Preterite subjunctive
sg	1	lagda	sg	1	lagdi
	2	lagdes		2	lagdis
	3	lagda		3	lagdi
pl	123	lagdun	pl	123	lagdin
		Imperative			Past participle
sg	2	legi!			gilegid, gilagd-
pl	2	leggiad!			

(e) ja-stems with the root structure -V:C (syncope; probably phonetic Rückumlaut, not marked in the script): e.g. do:pian (DAUPJ)

		Present indicative			Present subjunctive
sg	1	do:piu [ø:]	sg	1	do:pie [ø:]
	2	do:pis		2	do:pies
	3	do:pid		3	do:pie
pl	123	do:piad	pl	123	do:pien

		Preterite indicative			Preterite subjunctive
sg	1	do:pta [o:]	sg	1	do:pti [?]
	2	do:ptes		2	do:ptis
	3	do:pta		3	do:pti
pl	123	do:ptun	pl	123	do:ptin

		Imperative	Past participle
sg	2	do:pi! [ø:]	gido:pid [ø:]
pl	2	do:piad!	gido:pt- [o:]

(f) verbs where the preterite and past participle descend from PGmc forms without a medial vowel: e.g. thenkian (THENKJ)

		Present indicative			Present subjunctive
sg	1	thenkiu	sg	1	thenkie
	2	thenkis		2	thenkies
	3	thenkid		3	thenkie
pl	123	thenkiad	pl	123	thenkien

		Preterite indicative			Preterite subjunctive
sg	1	tha:hta	sg	1	tha:hti
	2	tha:htes		2	tha:htis
	3	tha:hta		3	tha:hti
pl	123	tha:htun	pl	123	tha:htin

		Imperative	Past participle
sg	2	thenki!	githa:ht(-)
pl	2	thenkiad!	

5.3.2 MLG In MLG, unstressed vowels merged in e (written e), and the OS o:-stem conjugation, exemplified in (a) above, consequently merged with the ja-stem conjugation exemplified in (b) above, in which the medial vowel had been retained. This gave rise to the following type of paradigm in MLG:

maken (MAKO:)

		Present indicative			Present subjunctive
sg	1	make	sg	1	make
	2	makest		2	makest
	3	maket		3	make
pl	123	maken/maket	pl	123	maken
		Preterite indicative			**Preterite subjunctive**
sg	1	makede	sg	1	makede (= Indicative)
	2	makedest		2	makedest
	3	makede		3	makede
pl	123	makeden	pl	123	makeden
		Imperative			**Past participle**
sg	2	make!			gemaket
pl	2	maket!			

In fact, unstressed -e- should have been syncopated before an obstruent, according to a regular sound change in MLG, but it is usually retained/ reinstated, as in the paradigm of maken above. This type of paradigm may be analysed as the major formation in MLG. It is the ancestor of the major paradigm in at least the modern East- and Westphalian dialects, which still retain medial -e-; and possibly also in other dialects where medial -e- has now been lost (see the discussion in chapter 6).

Alongside the more usual maken type, however, forms showing the effects of MLG syncope do occur, especially in verbs with a root-final dental plosive (see chapter 6). Paradigms of this type also show an alternation in vowel length, which developed as a result of phonological changes which followed syncope: the shortening of long vowels before clusters and the lengthening of short vowels in open syllables. Since syncope created new closed syllables and consonant clusters in verbs with a single root-final consonant, alternations arose within paradigms, between forms with syncope and a short or shortened root vowel, and forms where syncope was not applicable (for example, forms with the endings -e, -en), and which therefore lengthened the root vowel, or retained an old long root vowel. In the maken type of paradigm, on the

other hand, the reintroduction of the unstressed -e- meant that the verb was not prone to these alternations in vowel length.

It is not clear whether paradigms showing the effects of MLG syncope and consequent alternation in vowel length should be analysed as a variant of the major type (cf. maken), or as a minor formation. However, they must at some stage have become a minor type: some of the modern dialects (e.g. dialect 33) show reflexes of forms with MLG syncope, and these clearly belong to minor formations. Indeed, these forms have sometimes developed a Rückumlaut alternation, by analogy with verbs where syncope is of pre-OS origin.

There are three types of conjugation which are clearly minor formations within MLG: (a) verbs with syncope dating back to pre-OS, and consequently a Rückumlaut alternation; (b) old e:-stem verbs; and (c) verbs which formed the preterite and past participle without a medial vowel already in PGmc.

(a) verbs with pre-OS syncope, and consequently Rückumlaut

(i) also an alternation in vowel length: e.g. höden (HO:DJ), lüden (LU:DJ), möten (MO:TJ)

Infinitive		Pret ind sg 13		Past participle	
höden	[ø:]	hodde	[o]	gehot	[o]
lüden	[y:]	ludde	[u]	gelut	[u]
möten	[ø:]	motte	[o]	gemot	[o]

(ii) no alternation in vowel length: verbs with a root-final cluster, e.g. rennen (RENNJ), tellen (TELLJ), wenden (WENDJ); and verbs with root-final r (vowel shortening did not take place before clusters of rC), e.g. keren "turn", leren "teach"

Infinitive	Pret ind sg 13	Past participle
rennen	rande/rende	gerant
tellen	talde/tellede	----
wenden	----	gewant/gewent
keren [e:]	karde/kerede	gekart/gekeret
leren [e:]	larde/lerede	gelart/geleret

Note here the alternative forms. In the verb rennen, the e of the present has been extended to the preterite, and similarly in wenden, the e has been extended to the past participle. In tellen, keren and leren, the e/e: has been extended, and in addition the unstressed medial vowel has also been introduced; in fact, these verbs have adopted forms like those of the maken paradigm. Note also that in both groups (i) and (ii) the OS distinction between the uninflected past participle, with syncope and an umlauted vowel, and the inflected past participle, with no syncope and a non-umlauted vowel, has broken down.

(b) old e:-stems: hebben (HABE: >> HEBBJ), seggen (SAGE: >> SEGGJ); the verb leggen (LEGGJ), which already in OS closely resembled seggen, can also be included in this group. By MLG, these verbs no longer preserved any e:-stem forms, but constituted a minor type of conjugation for other reasons: they preserve an alternation between a geminate consonant in the infinitive/1st singular present/plural present and a simple consonant in the 2nd and 3rd singular present/preterite/past participle (this was once more widespread; cf. OS swebbian); and the root-final consonant could be lost in this latter group of forms. In other words, *additional* peculiarities have developed, which are now the principal distinguishing features of this minor formation.

hebben

	Present indicative		Present subjunctive
sg 1	hebbe	sg 1	hebbe
2	hevest/hefst/heft/hest	2	hebbest
3	hevet/heft/het	3	hebbe
pl 123	hebben/hebbet/hebt	pl 123	hebben

		Preterite indicative			Preterite subjunctive
sg	1	hadde	sg	1	hadde/hedde
	2	haddest		2	haddest/heddest
	3	hadde		3	hadde/hedde
pl	123	hadden	pl	123	hadden/hedden

		Imperative	Past participle
sg	2	----	gehat
pl	2	----	

seggen; similarly leggen

		Present indicative			Present subjunctive
sg	1	segge	sg	1	segge
	2	segest/sechst/secht		2	seggest
	3	seget/secht/set/seit		3	segge
pl	123	seggen/segget	pl	123	seggen

		Preterite indicative	Preterite subjunctive
sg	1	segede/sechte/sachte/sede	= Indicative
	2	segedest etc.	
	3	segede etc.	
pl	123	segeden etc.	

		Imperative	Past participle
sg	2	sege!/segge!	gesecht/gesacht/geset
pl	2	segget!	

(c) verbs which formed the preterite and past participle without a medial vowel in PGmc: e.g. denken (THENKJ), bringen (BRING), söken (SO:KJ)

Infinitive	Pret ind sg 13	Past participle
denken	dachte	gedacht
bringen	brachte	gebracht
söken	sochte	gesocht

5.3.3 MDu The weak verb systems of MDu and MLG are fairly similar; MDu will therefore be dealt with quite briefly. The endings of what might be analysed as the major formation were as follows:

Infinitive -en

Present indicative			Present subjunctive		
sg	1	-e	sg	1	-e
	2	-(e)s		2	-(e)s
	3	-(e)t		3	-e
pl	1	-en	pl	1	-en
	2	-(e)t		2	-(e)t
	3	-en		3	-en

Preterite indicative			Preterite subjunctive
sg	1	-(e)de	= Indicative
	2	-(e)des	
	3	-(e)de	
pl	1	-(e)den	
	2	-(e)det	
	3	-(e)den	

Imperative			Past participle
sg	2	-e	-(e)d-, -(e)t
pl	2	-(e)t	

In the preterite, forms with and without the medial -e- occur side by side (though verbs with a root-final liquid, nasal, or dental obstruent show a preference for syncopated forms). However, unlike in MLG, syncope is usually not accompanied by an alternation in vowel length. This may be due to levelling of the alternation in vowel length. Alternatively, we might hypothesise that syncope did not occur until *after* the changes affecting vowel length (the shortening of long vowels before clusters and the lengthening of short vowels in open syllables). The evidence of relic forms, however, favours the analogical account, since it suggests that in MDu, just as in MLG, syncope preceded at least the lengthening of vowels in open syllables (pace van Loey (1965)). This is discussed in more detail in chapter 6.

The paradigm illustrated above, with its two variants with and without syncope, may be analysed as the major formation within MDu. The minor formations of MDu are of three types, reflecting (a) ja-stem verbs with pre-OS syncope and consequently a Rückumlaut alternation, b) old ei-stems and (c) verbs which formed the preterite and past participle

without a medial vowel already in PGmc.

(a) syncope and Rückumlaut: e.g. kennen (KENNJ), bewenden (WENDJ), setten (SETTJ). All of these verbs have alternative forms with e throughout the paradigm, which conform to the major conjugation.

Infinitive	Pret ind sg 13	Past participle
kennen	cande/kende	ghecant/ghekent
bewenden	bewande/bewende	bewant/bewant
setten	satte/sette	ghesat/gheset

We might have expected this type to contain verbs with a long root vowel, which in MDu would have been shortened before a cluster in the preterite and past participle (cf. MLG type (a)). A few of these verbs have adopted a similar formation to the verbs which formed the preterite and past participle without a medial vowel already in PGmc (cf. type (c)). Most of them, however, have adopted the major formation, with no root-vowel alternations. Note that the umlaut of long vowels is not generally distinguished in MDu, nor in many of the modern Dutch dialects, so that the Rückumlaut alternation would not be applicable here. Only syncope itself would therefore have distinguished these verbs from the verbs which did not undergo pre-OS syncope. Moreover, *if* MDu syncope preceded the shortening of long vowels before clusters (this ordering is debatable; see the discussion above), the two formations would have become indistinguishable.

(b) the old e:-stem verbs: hebben (HABE: >> HEBBJ), seggen (SAGE: >> SEGGJ); as in MLG, leggen (LEGGJ) is included in this group.

		Present indicative			Present subjunctive
sg	1	hebbe	sg	1	hebbe
	2	heves/he(e)fs/heb(be)s		2	hebbes
	3	hevet/he(e)ft		3	hebbe
pl	1	hebben	pl	1	hebben
	2	hebbet		2	hebbet
	3	hebben		3	hebben

		Preterite indicative	Preterite subjunctive
sg	1	hadde	= Indicative
	2	haddes	
	3	hadde	
pl	1	hadden	
	2	haddet	
	3	hadden	

		Imperative	Past participle
sg	2	----	ghehadt
pl	2	----	

segghen; similarly leggen

		Present indicative			Present subjunctive
sg	1	segghe/seghe	sg	1	segghe/seghe
	2	seg(g)hes/se(e)chs		2	segghes/seghes
	3	seg(g)het/se(e)cht		3	segghe/seghe
pl	1	segghen/seghen	pl	1	segghen/seghen
	2	segghet/seghet		2	segghet/seghet
	3	segghen/seghen		3	segghen/seghen

		Preterite indicative	Preterite subjunctive
sg	1	seide/seghede	= Indicative
	2	seides/seghedes	
	3	seide/seghede	
pl	1	seiden/segheden	
	2	seidet/seghedet	
	3	seiden/segheden	

		Imperative	Past participle
sg	2	seghe!/segghe!/sech!	gheseghet/-seit/-sacht
pl	2	segghet!/seghet!	

(c) verbs which formed the preterite and past participle without a medial vowel already in PGmc: e.g. denken (THENKJ), soeken (SO:KJ), dopen (DAUPJ)

Infinitive	Pret ind sg 13	Past participle
denken	dochte/dachte	ghedocht/-dacht
soeken	sochte	ghesocht
dopen	dochte	ghedocht

5.3.4 The modern dialects The verbs deriving from old *e:*-stems (plus LEGGJ), and the verbs which formed the preterite and past participle without a medial vowel in PGmc, are a core group which belong to minor conjugations in practically all the dialects. Indeed, in some Dutch and Flemish dialects, they are the only weak verbs following minor conjugations. In dialects with a large number of weak verbs following minor conjugations, such as the Westphalian dialects, they show a greater degree of root alternation than other minor weak verb paradigms, and sometimes have different endings. We may hypothesise that these features are a result of the length of time for which these verbs have belonged to minor formations; it seems to be a feature of verbs in minor conjugations that they tend not to level out new alternations which arise through sound change. Consequently, alternations accumulate over time.

We shall begin by discussing the dialects with only a very few verbs following minor weak conjugations: 2, 4, and 8 in the East, and the Dutch/Flemish dialects 42, 47, 49, 51, 53, 54, 55, 56, 59, 60, 61, 63, 65 and 67. The minor weak conjgations here consist only of former *e:*-stem verbs (plus LEGGJ) and verbs which formed the preterite and past participle without a medial vowel already in PGmc, plus perhaps one or two further verbs which have been assimilated to this latter type. The system of 59 (Waterland) will serve as an example of this group. The inflectional endings of the major paradigm are as follows:

Infinitive -*e*

		Present			Preterite
sg	1	zero	sg	1	-*de*/-*te*
	2	-*e*[6]		2	"
	3	-t		3	"
pl	123	-*e*	pl	123	"

Imperative	Past participle
?	*e*----t

In the preterite, the ending -*te* is found after root-final voiceless obstruents, -*de* elsewhere. Note that we would expect the 1st/3rd singular preterite to have lost its final -*e* by phonological change, like the 1st singular present, but it has retained/reintroduced it (the final -*e* of the 2nd singular and the plural, on the other hand, is the expected reflex of older -*en*.) This is one of the features, along with root vowel alternation, which distinguishes the major from the minor formations: in the minor types (see below) the 1st/3rd singular shows the expected loss of -*e*. This distinction is characteristic of the Dutch/Flemish dialects of this group; in the Eastern dialects (2, 4 and 8), on the other hand, -*e* has been lost in the major formation as well as in the minor paradigms, and only root alternations distinguish the major and minor types of weak verbs.

The minor paradigms may be divided into two types:

(a) old *e:*-stem verbs: *e:w(e)* (HABE: >> HEBBJ), *se:ge* (SAGE: >> SEGGJ); plus *le:ge* (LEGGJ)

e:w(e)

		Present			Preterite
sg	1	e:w	sg	1	at
	2	e:we		2	ade
	3	et		3	at
pl	123	e:we	pl	123	ade

Past participle
at

se:ge

Present		Preterite	
sg 1	se:x	sg 1	sa:(t)
2	se:ge	2	sa:de
3	sa:t	3	sa:
pl 123	se:ge	pl 123	sa:de

Past participle

esa:t

le:ge

Present	Preterite
as se:ge	from the strong verb LIGGJ

Past participle

as se:ge

Rückumlaut is preserved in these verbs: there is an alternation between e: in the present and a: in the preterite. The a: in the 3rd singular present of se:ge, le:ge, seems to be the reflex of an old e:-stem form, without umlaut: such forms are not found either in MLG or MDu, and this dialect has evidently retained a relic from an older stage of the language, which by-passed the medieval records. Note that these verbs distinguish the 2nd singular and the plural preterite from the 1st/3rd singular preterite, unlike the major formation, which has a single form throughout the preterite. This can be accounted for phonologically:

sg 2 pl 123	-e	<	-en
sg 13	zero	<	-e

(b) verbs which formed the preterite and past participle without a medial vowel already in PGmc: brenge (BRING), denke (THENKJ), so:wke (SO:KJ), ko:wpe (KAUPJ)

The present tense of these verbs follows the major formation; the preterite and past participle are formed as in the following illustration:

so:wke

Preterite

sg	1	soxt
	2	soxte
	3	soxt
pl	123	soxte

Past participle

ezoxt

All four verbs end in -oxt in the preterite and past participle, and thus form a tightly-knit group, despite the differences in the present tense forms. In all cases, the forms are the expected reflexes of the MDu forms. This applies equally to ko:wpe : the earlier cluster ft in the preterite and the past participle (cf. MLG kofte) had become cht in MDu, by regular sound change, so that this verb had become like the other verbs of its type. Note that, like the minor type (a), these verbs distinguish the 2nd singular and the plural from the 1st/3rd singular preterite.

Most other weak verbs previously belonging to minor formations have either been lost or have adopted the major formation in Waterland and the other dialects of this group. Rückumlaut has been eradicated, except in these few verbs, where it is combined with, and to some extent obscured by, other alternations. Alternations in vowel length are irrelevant for the distinction between major and minor weak verbs here. In most of these dialects, there are no alternations in vowel length at all within verb paradigms; in others, what seems to be a further wave of vowel shortening has affected *all* weak verbs, including the major type (see chapter 6).

We shall now turn to dialects where there are a large number of verbs following minor weak conjugations. Apart from the two minor weak types found in the dialects just discussed, there is a third minor weak type, generally characterised by an alternation in vowel length and possibly also a Rückumlaut alternation. In some dialects, such as 33 (Soest), there is also a fourth type which shows the effects of MLG

syncope, and consequently an alternation in vowel length; some of these verbs have also developed a Rückumlaut alternation, by analogy with type (a) below.

The system of dialect 25 (Dorste) will serve as an example of this type (though it does not have minor weak verbs of the fourth type mentioned above, with syncope dating back to MLG). The endings of the major formation are as follows:[7]

Infinitive -n

Present			Preterite (Ind + Subj)		
sg	1	-e	sg	1	-e
	2	-est		2	-est
	3	-et		3	-e
pl	123	-et	pl	123	-n

Imperative			Past participle
sg	2	-e	e----et
pl	2	-et	

The minor weak formations can be divided into three types: (a) verbs with pre-OS syncope (and consequently Rückumlaut and vowel length alternations); (b) old ei-stem verbs; and (c) verbs which formed the preterite and past participle without a medial vowel already in PGmc.

(a) verbs with pre-OS syncope, and consequently Rückumlaut and vowel length alternations: luien (LU:DJ), beduien (THU:DJ), hoien (HO:DJ), bloien (BLO:DJ), moitn (MO:TJ), stœ:tn (STAUTJ)

Note that the syncope (and consequent vowel shortening) in the 2nd and 3rd singular present forms dates from MLG rather than pre-OS (cf. chapter 6). It is significant that the minor types of conjugation tend to retain the effects of this sound change, whereas the major conjugation does not.

e.g. moitn

		Present
sg	1	moite
	2	møst
	3	møt
pl	123	moitet

		Preterite indicative			Preterite subjunctive
sg	1	mote	sg	1	møte
	2	motest		2	møtest
	3	mote		3	møte
pl	123	motn	pl	123	møtn

Past participle

emot

The other verbs of this type differ from moitn in the following points:

(i) The verbs with the root vowel ui in the infinitive take y in place of ø (e.g. luien: 3rd singular present lyt) and u in place of o (e.g. 1st/3rd singular preterite lude).

(ii) The verbs with a root-final vowel (formerly d) take -d- in the preterite; the other verbs take -t-.

Note that not only do these verbs differ from the major formation in having root-vowel alternations, but the endings also differ, as a result of syncope.

It is notable that all of these verbs have, or formerly had, a root-final dental plosive. Taking into account the fact that the forms with syncope, apart from the 2nd singular present, have endings beginning with a dental plosive, we may conclude that syncope is favoured between two dental plosives. This was not part of the original conditioning environment for pre-OS syncope, but it seems to have been important for its retention into the modern dialects (note, incidentally, that this environment was one of the factors favouring the later wave of syncope in MLG).

(b) old e:-stem verbs: hemm (HABE: >> HEBBJ), se:ien (SAGE: >> SEGGJ); plus le:ien (LEGGJ)

hemm

Present indicative

sg	1	heve
	2	hest
	3	het
pl	123	hevet

Preterite indicative			Preterite subjunctive		
sg	1	hare	sg	1	here
	2	harest		2	herest
	3	hare		3	herest
pl	123	harn	pl	123	hern

Past participle

ehat

The r in the preterite here reflects an earlier dd (cf. MLG hadde). This does not appear to be a regular sound change: cf. the preterite form blode of the type (a) verb bloien (BLO:DJ), where the reflex of MLG dd is d. In fact, preterite forms in r for the verb HABE: are found in many other dialects, and also in documents from the 17th century (Lasch 1918, Baetke 1917); this suggests that the change dd > r in this verb may have occurred quite early.

se:ien; similarly le:ien

Present

sg	1	se:ie
	2	secst
	3	sect
pl	123	se:iet

Preterite indicative			Preterite subjunctive		
sg	1	si:e/secte	sg	1	si:e
	2	si:est/sectest		2	si:est
	3	si:e/secte		3	si:e
pl	123	si:en/sectn	pl	123	si:en

Past participle

*e*sect

The preterite form si:*e* is the reflex of MLG segede (with loss of intervocalic g and d by regular sound change), while secte is the reflex of MLG sechte.

(c) verbs which formed the preterite and past participle without a medial vowel already in PGmc: brinn (BRING), denkn (THENKJ), soikn (SO:KJ), kœ:pm (KAUPJ); plus dœ:pm (DAUPJ), which has adopted a paradigm identical to that of kœ:pm.

The first two verbs, brinn and denkn, form the present tense according to the major paradigm. The preterite tense and past participle forms are as follows:

brinn

	Preterite indicative		Preterite subjunctive
sg 1	broxt*e*	sg 1	brøxt*e*
2	broxtest	2	brøxtest
3	broxt*e*	3	brøxt*e*
pl 123	broxtn	pl 123	brøxtn

Past participle

*e*broxt

denkn

	Preterite indicative		Preterite subjunctive
sg 1	daxt*e*	sg 1	dext*e*
2	daxtest	2	dextest
3	daxt*e*	3	dext*e*
pl 123	daxtn	pl 123	dextn

Past participle

*e*daxt

The other verbs of this type show the effects of MLG syncope and vowel shortening in the 2nd and 3rd singular present, like type (a). They also show a consonant alternation in the present, which must have developed by analogy with the preterite and past participle:

soikn

Present

sg	1	soike
	2	søxst
	3	søxt
pl	123	soiket

Preterite indicative			Preterite subjunctive		
sg	1	soxte	sg	1	søxte
	2	soxtest		2	søxtest
	3	soxte		3	søxte
pl	123	soxtn	pl	123	søxtn

Past participle

esoxt

kœ:pm; similarly dœ:pm

Present

sg	1	kœ:pe
	2	køfst
	3	køft
pl	123	kœ:pet

Preterite indicative			Preterite subjunctive		
sg	1	kofte	sg	1	køfte
	2	koftest		2	køftest
	3	kofte		3	køfte
pl	123	koftn	pl	123	køftn

Past participle

ekoft

In dialect 25, the minor types of weak verb conjugation have preserved the Rückumlaut alternation intact. This is true of a number of other East- and Westphalian dialects: 24, 25, 28, 29 and 30. The pattern can be illustrated by the following diagram:

Pattern (i)

		Present	Pret ind	Pret Sub
sg	1	[+long] [+uml]	[-long] [-uml]	[-long] [+uml]
	2	[-long] [+uml]	" "	" "
	3	[-long] [+uml]	" "	" "
pl	123	[+long] [+uml]	" "	" "

Past participle

[-long] [-uml]

Some Rhineland dialects (36, 40, 41, 45 and 46) also preserve Rückumlaut intact. These dialects differ from the group discussed above, however, in that the preterite subjunctive forms have been lost. Further, in all except dialect 40, vowel shortening is a feature of the major formation, as well as of the minor weak paradigms. Rückumlaut is consequently the principal distinguishing feature of the minor weak verb paradigms, and the present tense does not differ from the major formation.

Two Eastern dialects (3 and 11) similarly show pattern (i) but have lost the preterite subjunctive forms. In these dialects, root vowel alternation is the only feature distinguishing the minor weak paradigms from the major formation, as the endings are the same.

A slightly modified pattern of alternation is found in a group of Westphalian dialects (31, 32, 33, 34 and 39):

Pattern (ii)

		Present	Pret ind		Pret subj
sg	1	[+long] [+uml]	[-long] [-uml]		[-long] [+uml]
	2	[-long] [+uml]	[-long] [+uml]	=	[-long] [+uml]
	3	[-long] [+uml]	[-long] [-uml]		[-long] [+uml]
pl	123	[+long] [+uml]	[-long] [+uml]	=	[-long] [+uml]

Past participle

[-long] [-uml]

Here the 2nd singular and the plural preterite indicative have umlauted vowels, and are identical to the corresponding preterite subjunctive forms. Indeed, the umlauted indicative forms are, ultimately, due to

the influence of the subjunctive. There is evidence, however, that this influence is only indirect, and that this pattern is an extension of a more widespread phenomenon affecting the *strong* verbs. Many dialects have extended the umlauted vowel of the preterite subjunctive to the 2nd singular and the plural preterite indicative in strong verbs; this can be traced back to MLG (see section 2, this chapter). In most cases, this extension of umlaut has continued to be confined to the strong verbs (as, for example in dialect 25, illustrated above). In the five dialects listed above, however, the phenomenon has been extended to the minor weak verb paradigms.

One Eastern dialect should be mentioned in connection with this group: dialect 5 (Koschneiderei). At an earlier stage the pattern must have been as illustrated in the diagram above, but the preterite subjunctive forms have now been lost. Another difference between this dialect and the Westphalian dialects discussed above is that most of the minor weak paradigms have the same endings as the major formation, and are distinguished from it only by alternations in the root.

In a further group of East- and Westphalian dialects (21, 22, 23, 26 and 70), at least some of the minor weak paradigms have the following pattern:

Pattern (iii)

		Present	Pret ind	Pret subj
sg	1	[+long] [+uml]	[-long] [-uml]	[-long] [+uml]
	2	[-long] [-uml]	" "	" "
	3	[-long] [-uml]	" "	" "
pl	123	[+long] [+uml]	" "	" "

Past participle

[-long] [-uml]

We would expect the 2nd and 3rd singular present to have an umlauted vowel like the rest of the present tense. In these dialects, however, they appear to have acquired the non-umlauted vowel of the preterite indicative and past participle. The direction of this analogical influence, from the marked preterite and past participle to the unmarked

present, is unexpected (cf. chapter 2). In fact, in all the dialects of this group except 21, not all the minor weak verbs have been affected by this development. Other verbs show the following pattern:

Pattern (iv)

		Present	Pret ind	Pret subj
sg	1	[+long] [+uml]	[-long] [+uml]	[-long] [+uml]
	2	[-long [+uml]	" "	" "
	3	[-long] [+uml]	" "	" "
pl	123	[+long] [+uml]	" "	" "

Past participle

[-long] [+uml]

There are, of course, two possible analyses here: the source of the umlauted vowel in the preterite indicative and the past participle could be either the 2nd and 3rd singular present (in which case we have an example of levelling in both directions within a single dialect), or the preterite subjunctive. In any event, the result is that Rückumlaut has been completely levelled out: only an alternation in vowel quantity remains.

In the remaining dialects, nearly all the minor weak verb paradigms show pattern (iv). The dialects with this system can be divided into three groups: an Eastern group (7, 9, 14, 15, 16, 18, 19 and 20); a Western (Dutch) group (44, 58, 62, 64 and 69); and three NLS dialects (73, 78 and 79). This suggests that we are dealing with independent developments in each area. As we mentioned above, the change can be analysed either as the extension of the vowel of the 2nd and 3rd singular, or as the extension of the preterite subjunctive vowel. The latter analysis seems particularly plausible in those dialects where the strong verbs also show the influence of the preterite subjunctive on the preterite indicative. In addition, this analysis would cover some instances which cannot be accounted for by the influence of the present tense. In the case of the verbs BRING and THENKJ, the appearance of an umlauted vowel in the preterite indicative and past participle cannot be analysed as the extension of the vowel of

the 2nd and 3rd singular present. The following example from dialect 16 illustrates this:

Infinitive	Pres sg 3	Pret ind sg 13	Past participle
breŋ	breŋt	brøxt	brøxt

The umlauted vowel ø in the preterite and past participle here obviously cannot be accounted for as an extension of the present tense vowel, which is e. It could, however, have been extended from the preterite subjunctive (which now no longer has separate forms).

However, the evidence is by no means all in favour of the preterite subjunctive as the source of the umlauted vowel. Firstly, the parallels between the minor weak verbs and the strong verbs should not be over-emphasised, as many of the dialects listed above (especially in the Dutch group) show no such development in the strong verbs. Secondly, there are many dialects where the verbs BRING, and to an even greater extent THENKJ, do *not* show the same development as the other minor weak verbs. Their different behaviour can be accounted for only if the 2nd and 3rd singular present forms are regarded as the source of the development. It is, of course, possible that different analyses are appropriate in different dialects.

With one or two exceptions,[8] the minor types of weak verb in these dialects have the same endings as the major formation (which, unlike in dialect 25, illustrated above, has undergone syncope; see chapter 6). Since, as we have seen, the Rückumlaut alternation has been levelled out in these dialects, the alternation in vowel length is now the principal distinguishing feature of the minor weak paradigms in contrast to the major formation.

Notes to chapter 5

1. The imperative varies between an e-raised vowel (which is not historically justified), and a non-e-raised vowel; it will be discussed separately at a later stage.

2. Although in written MLG i and e have merged in open syllables, this is not true of many of the modern dialects: MLG represents only part of the Low German area. Where i and e have not merged, classes IV and V cannot be included in the group of verbs which acts as a model for the change in the e-raising verbs. Under these circumstances, the situation in classes IV and V will be the same as illustrated in class II(a) below.

3. In some dialects the 2nd singular indicative shares the alternant of the 1st/3rd singular indicative, rather than that of the plural.

4. In the uninflected form, the formative was in a final rather than a medial syllable.

5. Most of the o:-stem forms derive from a PIE athematic formation. The forms in -ia- are relics of a PIE thematic formation, in which -ie/io was added to the stem.

6. The 2nd singular here has adopted the ending of the plural.

7. Note that (i) verbs with root-final n, r or l do not have -e- in the endings of the 2nd and 3rd singular present and the past participle.
(ii) The ending -n of the infinitive and the preterite plural is replaced by -m after root-final labial consonants and by -en after root-final vowels.
(iii) The preterite has lost its characteristic dental ending: -d- has been lost intervocalically, leaving the ending -e. In some dialects, this sound change would be expected but has not in fact taken place: either the ending -ede is still found, or an unexpected development to -ere has occurred (-r- would be the expected reflex of intervocalic -dd- rather than -d-).

8. The exceptions are as follows: (i) In dialect 79 (Husby), the major formation has the ending -e in the 1st/3rd singular preterite, whereas the minor formations have lost this ending (cf. the Dutch dialects discussed on p.191).
(ii) In the Western group of dialects, the major formation and the majority of minor weak paradigms show the ending -de/-te in the 1st/3rd singular preterite; but a small group of minor weak paradigms, mainly verbs which formed the preterite and past participle without a medial vowel already in PGmc, have lost the final -e of this ending.

6 Vowel length

6.1 MLG As we outlined in chapter 3, two changes affected the length of vowels just before and during the MLG period: firstly, short vowels were lengthened in open syllables; and secondly, long vowels were shortened before certain consonant clusters (especially clusters ending in -t). An apparently earlier change is relevant to both of these changes: the unstressed vowel e was lost before an obstruent. To use Kiparsky's terminology (but in a diachronic rather than synchronic sense), this "fed" the shortening of originally long vowels:

loss of -e-	CV:CeO	>	CV:CO	(where O denotes obstruent)
shortening	CV:CO	>	CVCO	

and "bled" the lengthening of short vowels in open syllables:

loss of -e-	CVCeO	>	CVCO
lengthening	cannot apply to V in CVCO		

The alternations which arose because of these changes can be seen by comparing 1st singular with 3rd singular present tense forms.[1] The former have the ending -e in MLG (which is retained because it is word-final), while the latter have the ending -t < -et, obligatorily in some strong verbs, optionally elsewhere (see below). Thus, from the Pre-OS root NEM, with an originally short vowel, we obtain the forms:

NEM	sg 1 ne:me	with lengthening of e in an open syllable
	sg 3 nimt	with no lengthening (i because of e-raising)

And from the Pre-OS root BLI:B, with an originally long vowels, the forms:

BLI:B	sg 1 bli:ve	with no shortening
	sg 3 blift	with shortening of i: before a cluster

are found in MLG.

However, there are many forms in MLG which retain (or have reintroduced) the unstressed vowel of the ending in forms such as the 3rd singular. It is notable that, according to Lasch (1914), verbs which had an alternation in vowel quality, deriving from umlaut or e-raising, within the present tense, almost always show forms without

-e- in the 3rd singular. Thus, to use the example above, the 3rd singular of NEM is always nimt. The verbs concerned are all strong. If they do have doublets, then the form with -e- has the same root vowel as the 1st singular:

GEB sg 1 ge:ve

sg 3 gift or, rarely, ge:vet

Verbs with no such alternation within the present (that is, all weak verbs and the remaining strong verbs) show both forms with -e- in the 3rd singular, and forms without:

SKRI:B sg 1 schri:ve

sg 3 schri:vet/schrift

Lasch also points out that in very frequent verbs, forms without -e- tend to predominate.

It seems likely that, as Lasch (1914) suggests, the -e- of these 3rd singular forms has been reintroduced, perhaps by analogy with the 1st singular (where we would not expect -e to be lost, because it is word-final). This would seem to be supported by the fact that whenever a 3rd singular form shows -e-, it also has the same root vowel as the 1st singular: we could argue that it has been completely remodelled on the 1st singular. Forms with e-raising or umlaut, and very frequent forms, would then seem to be more resistant to this analogical influence. It is interesting that these two groups of verbs behave in a similar fashion. One might use such data to support the kind of synchronic analysis suggested by Bybee and Brewer (1980), in which both forms with unproductive alternations and very frequent forms would be stored lexically as wholes, rather than being derived by productive morphological rules. We could then make the generalisation that lexically stored forms are more resistant to analogical influence. Indeed, because this analogical change affects, at least optionally, all forms which in this model would be analysed as derived by rule, we could even hypothesise that it was implemented by a change in the rules by which the forms were derived. Lexicalised forms would then be automatically excluded. However, such synchronic conclusions from

diachronic data should perhaps be treated with caution (cf. Kiparsky 1982a); the similar diachronic behaviour of highly frequent forms and forms with unproductive alternations might be due to factors of language use, such as language acquisition, rather than to the structure of the adult's grammar (see the discussion in chapter 8).

We should now turn to the present plural. The dominant ending of the present plural in the MLG written language was -*en*, and since syncope only occurs before obstruents, there is no possibility of syncope in such forms. There are, however, some plural forms with the ending -*et*, just like the 3rd singular. Here syncope could potentially apply, but in fact it very rarely does. Note, incidentally, that in the present plural, factors such as *e*-raising and umlaut do not some into play; we would expect all verbs to show the same vowel as in the 1st singular. And like the 3rd singular forms with no *e*-raising/umlaut alternation, these plural forms very rarely show syncope. According to Lasch, only highly frequent verbs show forms with syncope in the present plural: *hebt* "have", *wilt* "will".

We should also mention that we would expect the medial -*e*- between the root and the dental ending of weak preterite and past participle forms such as *makede*, *gemaket* to be lost.[2] This would also have given rise to the shortening of long vowels and would have prevented the lengthening of short vowels. However, as in the 3rd singular present, most weak verb forms in MLG do show the unstressed vowel. This could again be accounted for as an analogical reintroduction (again modelled on the 1st singular present). There was, however, a tendency for weak verbs with a stem-final dental plosive to show forms with syncope. Here the sequences -*ted*- or -*ded*- tended to be reduced to -*tt*- and -*dd*- respectively; and an alternation consequently developed in the length of root vowels within the paradigms of these verbs. Under these conditions, syncope seems to be a "stronger" phonological development, in that it can override the morphological considerations which cause it to be reintroduced in the majority of weak preterite forms.

Finally, we must look at the 2nd singular preterite (indicative and subjunctive) of strong verbs. In MLG the ending of these forms is always -es(t),[3] whereas we might have expected it to undergo syncope, to give -s(t). In the subjunctive, the -e- in this ending has almost certainly been reintroduced by analogy with the 1st/3rd singular preterite subjunctive, where -e is retained word-finally. This same influence might also account for the -e- of the indicative. Note, in this connection, that in classes IV and V, where umlaut in the preterite is clearly and consistently marked, the 2nd singular preterite indicative has the same root vowel, e, as the subjunctive (though as we discussed in chapter 5, it is not clear whether this is due to phonological or analogical change).

6.2 MDu We have seen that in MLG the syncope of unstressed vowels and the shortening/lengthening of root vowels were closely intertwined: doublets such as bli:vet/blift (BLI:B) occur, but never *bli:ft or *blifet. In MDu, on the other hand, forms with syncope but a long vowel, of the type bli:ft, are quite normal alongside bli:vet. It is not clear, from a form such as bli:ft, whether syncope and shortening occurred in the reverse order to MLG:

shortening	cannot apply to bli:vet		
loss of -e-	bli:vet	>	bli:ft (=optional)

or whether they occurred in the same order and the long vowel was later reintroduced by analogy:

loss of -e-	bli:vet	>	bli:ft
shortening	bli:ft	>	blift
analogy	blift	>>	bli:ft cf. 1st sg bli:ve (or bli:vet)

It is significant that forms with a short vowel of the type *blift do not occur at all, even as relics, in verbs which originally had a long vowel. The former account, in which shortening precedes loss of -e-, is therefore rather convincing.

Turning to verbs with an originally short root vowel, however,

we find that alongside 3rd singular forms with a lengthened root vowel:

GEB sg 3 gheeft

there are also relic forms with a short vowel are found in verbs which originally had a short vowel:

BREK sg 3 brect

This suggests that the lengthening of short vowels in open syllables did follow the loss of -e-, as in MLG, and that forms such as gheeft with long vowels are the result of analogy:

	original 3rd sg form CVCet			
loss of -e-	CVCet	>	CVCt	
lengthening	cannot apply to CVCt			hence relic MDu brect
analogy	CVCt	>>	CV:Ct	cf. 1st sg CV:Ce
			(or CV:Cet)	

This would not be in agreement with Schönfeld's (1965) statement that lengthening in open syllables preceded syncope. However, it is difficult to account for the relic forms if van Loey's ordering is accepted.[4] If the analogical account is correct, then the difference between MLG and MDu could be summed up as follows. When the 3rd singular is remodelled on the 1st singular in MLG, both the unstressed vowel -e- and the long root vowel of the 1st singular pass over to the 3rd singular; the resultant 3rd singular form is of the type CV:Cet. In MDu, on the other hand, when the 3rd singular is remodelled on the 1st singular, the long root vowel of the 1st singular passes over, but not necessarily the unstressed vowel -e-; the resultant 3rd singular form may be either of the type CV:Ct or CV:Cet.

6.3 The modern dialects In the West- and Eastphalian dialects, as in MLG, the majority of weak verbs do not show syncope and shortening in the 2nd and 3rd singular present (nor in the preterite and past participle). Since, however, the 2nd and 3rd singular of strong verbs *do* show syncope and shortening where applicable, it seems likely that syncope and shortening are the expected phonological developments, and have been levelled out in the major formation. The number of verbs with

syncope and shortening is in fact rather larger than in MLG: whereas in MLG only strong verbs with an e-raising or umlaut alternation within the present tense were affected, there is no such restriction in these dialects. Moreover, in addition to the strong verbs, certain minor types of weak verbs (such as the "Rückumlaut" verbs, with Pre-OS syncope in the preterite) have often retained the effects of MLG syncope and shortening in the 2nd and 3rd singular. In some of the dialects, syncope and shortening have been retained (in the preterite and past participle, as well as the 2nd and 3rd singular present) in a number of other weak verbs; these verbs may now be analysed as a minor type, precisely because they have retained these features.

Note that we would also expect to find syncope and shortening in the present plural, but they have been levelled out even in the strong verbs (except in dialect 39; see below). This suggests that there is a tendency for forms expressing marked categories, such as plural, to be less resistant to analogical change.

In some southern Westphalian dialects there are quite severe restrictions on the extent of syncope, and consequently shortening, even within the strong verbs. These restrictions can be expressed, diachronically if not synchronically, in phonological terms. In dialects 30 (Rhoden), and 39 (Lüdenscheid), syncope and shortening in the 2nd and 3rd singular present of strong and minor weak verbs are restricted to verbs with a root-final t or with an original root-final d which has now been lost.[5] The only exceptions are single verbs in each dialect. It seems likely that this conditioning results from an original restriction on the phonological environments in which syncope took place. It seems to have been restricted to the environment -tet, -test, -det, -dest. Indeed, it is possible that it was restricted to the environment between two dental plosives, and then passed analogically from the 3rd singular to the 2nd singular present.

It is interesting to note that in dialect 39 syncope and

shortening can also be seen in the present plural of strong verbs with root-final t or original d.[6] Since the present plural, like the 3rd singular, has the ending -(e)t, this is an expected phonological development.

In dialect 33 (Soest) the restrictions on syncope and shortening in the strong verbs are rather different; but again, an account in terms of the original conditioning of syncope may be attempted. The facts are as follows: strong verbs of classes I, II and VII show syncope and shortening, whereas strong verbs of classes IV, V and VI do not. The common factor among the first group of verbs is that they originally had a long root vowel. The second group, on the other hand, had an originally short root vowel. We could therefore suggest that syncope only took place after a long root vowel (since syncope preceded vowel shortening and lengthening, this distinction was still preserved at the time when syncope took place). Thus, taking the 3rd singular Soest form ɣript, from GRI:P, we would postulate the following development:

	reconstructed earlier form:	gri:pet	
loss of -e-	gri:pet	>	gri:pt
shortening	gri:pt	>	ɣript

In the 3rd singular of a class IV verb such as niemet, from NEM, on the other hand, the development would be as follows:[7]

	reconstructed earlier form:	nimet	
loss of -e-	will not apply in nimet		
diphthongisation	nimet	>	niemet

Most of the modern dialects, excluding West- and Eastphalia, now generally show syncope throughout the verb system. However, syncope is not necessarily accompanied by shortening. The situation can be summed up as follows. Those forms which show both syncope and shortening in most West- and Eastphalian dialects (that is, the 2nd and 3rd singular of strong verbs) similarly show both syncope and shortening in these other dialects. The forms where syncope appears to have been levelled out in most East- Westphalian dialects (that is, the 2nd and 3rd singular of most weak verbs, the plural present of both weak and strong

verbs, and the preterite and the past participle of weak verbs) show syncope but not shortening in these other dialects. Two possible sequences of events may be postulated to account for these facts. The first alternative is that these dialects may have passed through a stage resembling MLG, and most East- and Westphalian dialects, in which syncope and shortening were levelled out except in strong verbs. There may later have been a second wave of syncope; the clusters created by this second wave would not have caused the shortening of preceding vowels:[8]

loss of -e- (1)	CV:Cet	>	CV:Ct	
shortening	CV:Ct	>	CVCt	remains in strong verbs
analogy	CVCt	>>	CV:Cet	cf. 1st sg CV:Ce
loss of -e- (2)	CV:Cet	>	CV:Ct	

Alternatively, the events may have been less complex, in that syncope may have occurred only once. Unlike MLG and the East- and Westphalian dialects, these other dialects would not have reintroduced the unstressed vowel -e-, though they would have levelled out the alternation in vowel length that arose as a result of syncope (this resembles one of the possible accounts for the MDu situation):

loss of -e-	CV:Cet	>	CV:Ct	
shortening	CV:Ct	>	CVCt	remains in strong verbs
analogy	CVCt	>>	CV:Ct	cf. 1st sg CV:Ce

In general, it does not seem possible to decide on the basis of the data between these alternative accounts.

In some Rhineland dialects, however, such as 40 (Wermelskirchen), there does seem to be evidence favouring the account in which there are two waves of syncope. Here, syncope occurs throughout the verb system, but shortening never occurs before root-final fricatives, even in strong verbs. If clusters of fricative plus t had existed at the time when shortening took place, we would expect long vowels to have been shortened before them. We must therefore conclude that the clusters did not exist at this time; in other words, that syncope had not yet taken place. The forms of strong verbs in root-final consonants other than fricatives, on the other hand, with

both syncope and shortening, suggest that syncope preceded shortening. It would therefore appear that the first wave of syncope did not apply to unstressed vowels following fricatives. A later wave of syncope must then be postulated to account for the fact that the unstressed vowel has now been lost in this environment in these dialects. The difference between the two strong verb forms gript and bli:ft could therefore be accounted for as follows:

	GRI:P	reconstructed 3rd sg	gri:pet	
loss of -e-	(1)	gri:pet	>	gri:pt
shortening		gri:pt	>	gript

	BLI:B	reconstructed 3rd sg	bli:vet	
loss of -e-	(1)	does not apply after fricative		
shortening		does not apply to	bli:vet	
loss of -e-	(2)	bli:vet	>	bli:ft

In the majority of weak verbs, the effects of syncope (1) and shortening would have been levelled out analogically, but the effects of syncope (2) would have been retained. It is worth noting that, in general, syncope is levelled out only when it is accompanied by shortening.

In some Western Dutch dialects, there is no alternation between long and short vowels at all within the verb system, though there is syncope throughout. The dialects in question are: 56 (Overflakkee), 57 (Oudbeierland), parts of 59 (Waterland), and 60 (Drechterland); probably also 55 (Schouwen-Duiveland) though the data are unclear. It is possible that shortening/lengthening has been levelled out throughout the verb system in these dialects. However, because there are no "relic" strong verb forms with an alternation in vowel length, there is nothing to show that the historical order of syncope and shortening/lengthening was the same in these dialects as in the Low German dialects. In other words, we could also propose an account in which syncope follows both the shortening of long vowels before clusters and the lengthening of short vowels in open syllables:

	initial form CV:Cet		
shortening	will not apply to V:		
loss of *-e-*	CV:Cet	>	CV:Ct
	initial form CVCet		
lengthening	CVCet	>	CV:Cet
loss of *-e-*	CV:Cet	>	CV:Ct

This resembles one of the possible accounts given for MDu. In MDu, however, there are relic forms where syncope seems to have prevented lengthening; therefore, while shortening may precede syncope, lengthening must follow it. In the Western Dutch dialects in question, on the other hand, there are no such relic forms, and an account in which both lengthening and shortening preceded syncope is therefore possible.

Finally, we must discuss a group of dialects in the SW of our area, in which syncope is accompanied by an alternation in vowel length *throughout* the verb system, in both major and minor formations. The dialects concerned are: 36 (Mülheim), 37 (Velbert), 41 (Remscheid), 42 (Krefeld), 45 (Montzen), 46 (Eupen), 49 (Aarschot), 50 (Brussels), 51 (Zuidoostvlaanderen), 53 (Westvlaanderen), and 54 (Antwerp).[9] In some dialects, there are phonological restrictions on the process; the precise nature of these conditions varies slightly from dialect to dialect. As we shall show below, morphological conditioning is also involved; again there are differences among the dialects.

The dialects which have the most unrestricted alternations in vowel length are 45 (Montzen) and 46 (Eupen). Here there are no phonological restrictions: all verbs with a long vowel or diphthong in the 1st singular have a short vowel in the 2nd and 3rd singular and 2nd plural present; weak verbs[10] have a short vowel throughout the preterite and in the past participle. In addition, strong and minor weak verbs have a short vowel in the 2nd singular and 2nd plural preterite. The alternation can be predicted in only one direction: given, for example, the 3rd singular present, we cannot predict whether

the 1st singular has a long or a short root vowel; but given the 1st singular, we know that the 3rd singular will always have a short vowel. It would therefore seem that, from a synchronic point of view, we are justified in calling the process "shortening", taking the 1st singular (or the infinitive, which has the same root vowel as the 1st singular) as base.

Since the process is of phonological origin and appears to have synchronic phonological motivation, the question arises whether it can be completely accounted for, synchronically, by a phonotactic rule, such as "only short vowels can precede consonant clusters". This rule cannot, however, be stated as a straightforward surface generalisation. Firstly, it is too strong: long vowels do sometimes occur before consonant clusters. Indeed, there are even examples of this within the verbal paradigm, though never in the 3rd singular or 2nd plural present. Secondly, it is too weak: it will not account for some cases of 3rd singular and 2nd plural forms with a short vowel. Verbs with a root-final t do not have a surface cluster in the 3rd singular and 2nd plural; in other words, verbs which already end in t do not add a further t in these forms. Nevertheless, these forms do show shortening of the root vowel. The only way that phonological conditioning could be maintained within a synchronic grammar would be to analyse these forms as having an underlying geminate tt, which would be simplified by a rule that is extrinsically ordered after vowel shortening:

vowel shortening	CV:tt	-->	CVtt
geminate simplification	CVtt	-->	CVt

Note that the ordering of these rules would be crucial in order to generate the correct forms; if they were reversed, geminate simplification would "bleed" vowel shortening, and 3rd singular and 2nd plural forms with long vowels would be generated. Rather than postulating such extrinsic ordering, we might prefer to deal with shortening in a synchronic grammar by morphological conditioning, making specific reference to the 3rd singular and 2nd plural.

In the other dialects with a vowel length alternation in the

major formation, the process is more restricted than in 45 (Montzen) and 46 (Eupen). The restrictions are, firstly, of a phonological nature, and are broadly similar from dialect to dialect. Dialects 41 (Remscheid) and 51 (Zuidoostvlaanderen) have the most liberal restrictions: shortening occurs everywhere except before a stem-final fricative. In dialect 49 (Aarschot), shortening occurs in verbs with root-final p, t, k, l, m or n. A rather interesting situation has arisen here with regard to verbs with (synchronically speaking) a root-final vowel. Some such verbs formerly had a root-final d, which was lost intervocalically:

1st sg CV:*de* > CV:*e*

In such verbs, shortening is historically justified in forms such as the 3rd singular, and indeed often still occurs, even though there is no surface cluster.

3rd sg CV:dt > CVdt > CVt

(Whether or not shortening does occur seems to depend partly on the root vowel). From these verbs, shortening has now sometimes also passed analogically to verbs which have always had a root-final vowel, where it is not historically justified:

1st sg CV:*e*

3rd sg CVt alongside expected CV:t

In dialects 50 (Brussels) and 54 (Antwerp), shortening occurs before root-final p, t, k and l; in 53 (Westvlaanderen) it occurs before root-final p, t, k or d (which in this dialect is retained);[11] and in 36 (Mülheim) and 37 (Velbert), it seems to be further restricted, namely to verbs with a root-final voiceless plosive (though the data are not absolutely clear).

Changes outside the verb system suggest that these phonological restrictions result not from the phonological conditioning of shortening itself, but rather from that of syncope. It is possible, in fact, that there were two waves of syncope, as in the neighbouring Rhineland dialects discussed on p.211. The first wave of syncope would have preceded shortening, and would not have applied after fricatives (nor,

perhaps, after nasals, depending on the dialect). The second wave would have followed shortening, and would not have had been phonologically restricted in this way. The only problem with such an account is that in dialect 49 (Aarschot) there is an isolated "relic" form bleft (BLI:B) with shortening before a fricative, and another Yeft (GEB) where syncope has prevented lengthening in a similar environment.

Just as the dialects with shortening in the major formation differ in the precise nature of the phonological conditioning, they also differ according to which forms are affected by shortening. The process is never purely phonotactic; as described above for Montzen and Eupen, verbs with a root-final t undergo shortening even though the relevant forms do not have a surface cluster. Moreover, in some dialects shortening does not occur where we might have expected it, before a consonant cluster. If we divide the forms into two groups, as in the table below:

	Shortening in:	
I	pres sg 3 pres sg 2 in -s(t) (old) pres pl 2 or pl 123 in -t pres sg 2 in -t[12] (new) weak pret[13] and past ptc	All dialects with shortening in the major formation
II	strong verbs: pret sg 2 in -st (45, 46) pret pl 2 in -t pret sg 2 in -t (51)	45 (Montzen), 46 (Eupen), 51 (Zuidoostvlaanderen)

we see that dialects 45, 46 and 51 have the most widespread shortening in terms of the forms which are affected. Recall also that these dialects, especially 45 and 46, have very few phonological restrictions on shortening. We may conclude, then, that dialects 45 and 46, in particular, are the "centre" of this innovation, while other, more peripheral areas to both the West and East have more restrictions on the process. We might almost say that the process becomes gradually more

restricted as we move either West or East of dialects 45 and 46; but dialect 51, with widespread shortening, disturbs this pattern.

A hierarchy of forms can also be discerned from the table: set II, which contains 2nd person preterite forms, is less likely to undergo shortening. The question arises, why these forms are not affected by shortening in the majority of these dialects. On purely phonological grounds, we would expect shortening to affect them: the clusters which conditioned shortening in present tense forms also occur in these forms. In dialects other than 45, 46 and 51, the long vowel may have been reintroduced in the 2nd singular and plural by analogy with the rest of the preterite paradigm. It is notable that the categories represented by these forms are relatively marked: the 2nd person is marked with respect to the 1st and 3rd singular, and the preterite is marked with respect to the present. Once again, then, we have evidence that forms representing marked categories are more likely to be affected by analogical changes, levelling out the effects of phonological change.

Only in dialects 45, 46 and 51 do these 2nd person preterite forms show vowel shortening. Indeed, in these dialects shortening can even be said to have become a specific marker of the 2nd person.[14] In dialect 45, the 2nd person forms of the strong verb DRAG show a short vowel even though the historical phonology would not lead us to expect one. In this dialect, we would expect the reflex of the OS form dregis to be dre:s, because of the loss of intervocalic g, but in fact the form dres appears. This contrasts with the 3rd singular form, which does show the expected reflex dreit < dregit. Two facts may account for the different behaviour of the 3rd singular and the 2nd singular here. Firstly, although 3rd person singular present forms generally show a short vowel, this generalisation is not as strong as for the 2nd person, where strong and most minor weak preterites also show a short vowel. Secondly, the different behaviour may reflect the unmarked status of the 3rd person with respect to the 2nd person: as we have seen before, forms expressing unmarked categories tend to be more resistant to analogical developments. Note, incidentally, that the analogical development

affecting the 2nd singular here is not of the proportional type; rather, the form changes apparently in order to conform to a broad generalisation which can be made about other forms the same morphological function, namely "2nd person forms have short root vowels". The notion of a schema, describing prototypical 2nd person forms, might be of use here.

Notes to chapter 6

1. The 2nd singular, with the ending -s(t) < -es(t), behaves in the same way as the 3rd singular as far as syncope is concerned. Lasch does not discuss the shortening of long vowels in the 2nd singular, and it is not clear whether we should expect long vowels to be shortened before clusters of the type -Cs(t). This seems to be particularly doubtful in the case of the cluster -Cs. However, the modern dialects would suggest that shortening did in fact take place in the 2nd singular. Whether this is an expected phonological development, or whether the 2nd singular follows the 3rd singular analogically, is uncertain.

2. As we discussed in chapter 5, a few weak verbs, such as MLG söken (SO:KJ), bringen (BRING), seem to have had preterite and past participle forms without a medial vowel between the root and the dental ending even in PGmc. A further group of verbs (specifically, -jan stems with a long root syllable) lost the medial vowel at a very early stage, long before the changes discussed in this section (cf. OS ho:rian (HAURJ) - preterite ho:rda).

3. The expected ending in the indicative would have been -e < -i (cf. OS). The ending -s(t) was introduced by analogy with other 2nd singular forms: those of the present tense (weak and strong), the preterite of weak verbs, and the preterite subjunctive of strong verbs.

4. It might be argued that the short vowel of brect is the result of later shortening of a lengthened vowel; but why did this "later shortening" never affect verbs with an originally long vowel?

5. The outlines of a similar restriction can also be discerned in dialect 31 (Assinghausen), but it is much less consistent. It is possible that it has been disrupted by analogical influences among the strong verbs.

6. Note that some of these present plural forms with syncope and shortening have also acquired umlaut, from the 3rd singular present.

7. Recall that in Westphalian dialects, short vowels are diphthongised rather than lengthened in open syllables.

8. We could also account for the situation in MDu by this more complex seqence of events; MDu would then, in a sense, represent a "later" stage than MLG.

9. The list may be too long (in particular, 36, 37 and 42 are doubtful), and, on the other hand, may not be exhaustive, since it is not always clear from the dialect grammars whether the alternation always occurs when the appropriate phonological environment is met.

10. Some minor types of weak verb, which as a result of phonological

developments now resemble strong verbs in the preterite, are an exception to this.

11. There also seem to be restrictions on the root vowels that may undergo shortening.

12. In many Dutch and Flemish dialects, the old 2nd singular form ending in -st has been replaced by the 2nd plural form in -t.

13. With the exception of some minor weak preterite forms which have developed long root vowels.

14. The development of vowel shortening into a marker of these person forms might appear to go against Bybee and Brewer's (1980) claim that members of the category of person cannot condition stem allomorphy across tense and aspect lines. However, this claim refers to alternations with purely morphological conditioning; and it could be argued that the process of shortening is for the most part phonologically conditioned.

Part three:

Conclusions

7 Conclusions on the alternations

7.1 The relative strength of the alternations There is evidence suggesting that the various types of alternations discussed in chapters 4 to 6 differ in tenacity. There are some cases where a combined ablaut/umlaut alternation has been replaced by a simple umlaut relationship. In abstract terms, the development can be expressed as follows:

x	y+uml	>>	x	x+uml

For example, in class II of dialect 39 (Lüdenscheid), the C˜ forms show the reflex of *au+umlaut, instead of expected *u+umlaut. The following development must have taken place:

B	C˜		B	C˜
*au	*u+uml	>>	*au	*au+uml

"Partial levelling" has occurred: the ablaut distinction *au - *u has been levelled out, but the umlaut alternation remains. A similar development probably also took place in the C forms, which also show the reflex of *au+umlaut. Assuming that they first acquired umlaut from the C˜ forms:

B	C	C˜		B	C	C˜
*au	*u	*u+uml	>>	*au	*u+uml	*u+uml

partial levelling between B and C/C˜ then introduced the reflex of *au+umlaut:

B	C/C˜		B	C/C˜
*au	*u+uml	>>	*au	*au+uml

However, it is in principle possible that the C forms did not acquire umlaut until after levelling had occurred between B and C. This would imply the following sequence of events:

B	C	C~		B	C	C~
*au	*u	*u+uml	>>	*au	*au	*u+uml
			>>	*au	*au	*au+uml
			>>	*au	*au+uml	*au+uml

In this case, there would still have been partial levelling between B and C~, but not between B and C.

Whereas partial levelling sometimes eliminates that part of a compound alternation which is due to ablaut, while leaving the umlaut alternation intact, there are no instances of the converse kind of development. That is, partial levelling never eliminates the umlaut element of an alternation, while leaving the ablaut element intact. The type of development diagrammed below never occurs:

*x y+uml >> x y

We might suggest that this asymmetry between ablaut and umlaut is due to the fact that umlaut is a more transparent relationship than ablaut, in two senses. Firstly, the relationship between a vowel and its umlauted equivalent is in most cases still statable in constant and fairly simple phonological terms in the modern dialects. In the cases above, the relationship can be expressed in terms of the feature [+back] versus [-back]:

x	versus	x+umlaut
[+back]		[-back]

Secondly, the umlaut alternation is found elsewhere in the inflectional morphology, for example in the singular versus plural of nouns, whereas the ablaut relationship is confined to the strong verbs.

There is a similar asymmetry between the e-raising/umlaut alternations and the vowel length alternation. This can be seen in the present tense of certain strong verbs, where we would expect a combined e-raising/umlaut and length alternation. There are no cases where the length alternation has been levelled, leaving an e-raising or umlaut alternation.[1,2] There are, on the other hand, cases where the e-raising/umlaut alternation has been levelled, leaving a simple alternation in length:

	A	A~		A	A~
(a)	*e:	*e	instead of expected	*e:	*i
(b)	*u:	*u	instead of expected	*u:	*u+uml

The alternants in (a) are found quite commonly in class IV and V verbs; for example:

sg 1 ste:le sg 3 stelt for expected *stilt

and (b) is found in many dialects in class II(b) verbs:

sg 1 slu:ke sg 3 slukt for expected *slykt

It is possible that in these examples the e-raising and umlaut alternations may have been levelled out *before* the alternation in vowel length arose. However, there is no evidence of the levelling of the e-raising alternation in MLG, and the length alternation had, of course, already developed at that stage. We may also mention that, in addition to these examples, there is further evidence that the length alternation is more tenacious than either the e-raising or the umlaut alternation: some dialects show an alternation in length in their major verb formation as well as in minor formations, whereas no dialect still has umlaut or e-raising alternations in its major formation.

The tenacity of the length alternation may be due to the fact that, while not strictly phonologically conditioned, it nevertheless retains some phonological motivation: in most cases, the short vowel occurs before a consonant cluster. It is also, of course, a more "recent" alternation. Moreover, although the conditioning is no longer purely phonological in any dialect (see chapter 6), the alternation was probably purely phonologically conditioned until relatively recently, compared with umlaut, for example. Bearing in mind Hogg's (1979) claim that alternations which are governed by synchronic phonological rules are never subject to analogical levelling or extension, we might therefore say that it has had less time in which to be levelled out.

7.2 Characteristics of major versus minor formations with respect to the alternations In no dialect does the major weak formation have alternations that can be traced back to ablaut, e-raising or umlaut.[3] Indeed, in most dialects the major formation has no alternations at all in the root vowel. However, as we discussed in chapter 6, some Rhineland and Flemish dialects do have an alternation in vowel length in the major formation. It is notable that although this alternation is not completely phonologically conditioned, it nevertheless retains transparent phonological motivation in most cases, as we mentioned above. The alternation in vowel length therefore differs from ablaut, e-raising and umlaut, which have no synchronic phonological motivation at all in the modern dialects. This evidence would therefore suggest that the only alternations that can be sustained within major formations are ones that retain some synchronic phonological motivation. This also seems to be true if we go outside our field of the root vowels: the only other alternation found in major formations, namely the wide-spread devoicing of root-final consonants before voiceless obstruents and word-finally, also has transparent phonological motivation.

In the minor formations, on the other hand, several different types of alternation have accumulated. For example, the strong verbs show ablaut, e-raising, umlaut and vowel length alternations. Moreover, the alternations between forms within a paradigm are often "compound": that is, the difference between two forms may be made up of two separate alternations, such as e-raising plus length:

STEL sg 1 ste:le sg 3 stilt e vs i *and* long vs short

This suggests that within minor formations, new alternations that develop as a result of phonological change are more likely to be retained rather than levelled out (though, as we have seen, compound alternations are sometimes broken down by partial levelling). An interesting example of this is found in MLG, where precisely those strong verbs with an umlaut or e-raising alternation in the present tense also tend to show an alternation in vowel length, (caused by syncope in precisely those forms which have a raised/umlauted vowel),

sg 1 ge:ve versus sg 3 gift

while all weak verbs and those strong verbs without an e-raising or umlaut alternation often level out syncope and the concomitant alternation in vowel length:

sg 1 bli:ve sg 3 bli:vet

There would therefore seem to be empirical evidence that major formations tend to remain "regular" (in the sense of "without alternations in the root"), whereas minor formations are left to become increasingly irregular. We could make the synchronic hypothesis that major formations always have a minimal degree of alternation compared to minor ones. The diachronic reasons for this are, of course, obvious: minor verb morphology consists precisely of paradigms which have retained alternations levelled out in the major formation. In addition, however, we could make the stronger diachronic hypothesis that alternations tend to be levelled out of major formations once their phonological conditioning has been lost. In minor verb morphology, on the other hand, new alternations that develop are less likely to be levelled out, even when they no longer have any phonological motivation whatsoever; alternations therefore tend to accumulate.

It is interesting to note, with regard to these differences between major and minor morphology, Barbour's suggestion (1982, p.352): "There may be a stronger case for using a particular descriptive model in one area of morphology than there is in another; in German, WP is more clearly indicated in non-productive verb morphology than in productive." He claims that in the productive (that is, in our terminology, the major) weak verb formation of standard German, the formation of the tense stems, at least, can be handled by an IP model.[4] But for the unproductive (that is, minor) morphology of strong verbs, a WP model is more satisfactory, because the tense stems are formed by vowel change, which is not readily describable in an IA or IP model.[5] Barbour concentrates on the differences between strong and weak verbs, singling out strong verbs because they constitute such a large proportion of the unproductive verb morphology. The evidence of

our dialects would suggest that not only strong verbs, but also minor types of weak verb are equally characterised by alternations in the root. Consequently, a WP framework would seem to be a more appropriate model not only for the strong verbs, but for the minor verb morphology in general.

Notes

1. There are cases in dialects 33 and 39 where this seems, at first sight, to have occurred, but in fact syncope and shortening never occurred in the verbs concerned. See the discussion of the phonological conditioning of syncope on pp.209f.

2. We are talking here of the present tense of strong verbs. It is true that we encountered cases in the preterite of of class IV/V(1) strong verbs where a length alternation had been levelled out, leaving an umlaut alternation ("quantitative levelling"):

B	C		B	C
[-long]	[+long]	>>	[+long]	[+long]
[-uml]	[+uml]		[-uml]	[+uml]

However, we argued there that this was not simply a case of intraparadigmatic levelling between B and C, but that interparadigmatic analogy also played a part, favouring the introduction of a long vowel in the B forms. Moreover, the length alternation there was not phonologically conditioned as it is within the present tense of strong verbs, where the short vowel always precedes a consonant cluster.

3. Of course, it could be argued that in the formations from which the major formations of the modern dialects derive historically (that is, the OS weak o:-stem class and certain types of i-stem verbs), there were never any ablaut alternations, and that the conditions under which the e-raising and umlaut alternations could develop were not present. However, this begs the question: why did this particular formation remain the major one?

4. A WP model would still be needed for the person/number morphology of weak verbs, because they exhibit both cumulation (that is, a many-to-one relationship between meaning and form) and extended exponence (a one-to-many relationship between meaning and form).

5. Note that he still claims that strong verb forms are generated by rule; but by a different type of rule from the productive (major) weak verb morphology.

8 Conclusions on analogical change

8.1 The movement of verbs between major and minor formations

Movement of this kind is generally in the direction from minor formations into the major formation, rather than vice versa. Only occasionally does a weak verb become strong. The isolated cases where this has occurred usually involve highly frequent verbs; for example, MAK "make, do" has become strong in several dialects, including 33 (Soest) and 69 (Veenkoloniën). Movement in the opposite direction, from strong to weak, is much more common. However, it is still rather sporadic; it is much less systematic than the other analogical changes discussed so far, in that it affects individual verbs rather than whole series. The only exception to this is a phenomenon found in some Flemish dialects, such as dialects 50 (Brussels) and 54 (Antwerp), where a large number of strong verbs have weak forms, at least in the preterite. In general, we can say that the movement of verbs from strong to weak does not affect the system as a whole, but simply the distribution of individual lexical items between the two types.

However, systematic generalisations can be made about the way in which a strong verb adopts the weak formation. When this happens, two developments always go hand in hand. Firstly (no temporal priority is implied here), we observed above that, within a given dialect, the major weak verb formation always has fewer alternations than the minor formations (that is, the minor types of weak verbs and the strong verbs). Consequently, when a strong verb adopts the major weak formation, the alternations between the root vowels are levelled out; this levelling is always in favour of the A alternant. Secondly, the verb acquires the endings of the major formation. Moreover, these two changes never occur separately.[1] The A alternant of strong verbs is never extended to the preterite or the past participle unless these forms also acquire the endings of the major formation. Conversely,

these forms never acquire the endings of the major formation without also undergoing levelling of their root vowel.[2]

We might therefore ask whether these two changes cannot be reduced to a single change. It seems that this is indeed possible, if certain assumptions are made about the structure of the rules deriving the major formation. Specifically, we would have to assume that this rule system derives all the forms in the paradigm from one of the forms which in strong verbs has the A alternant (that is, from the 1st singular present, the infinitive, or the plural present), or from an abstract root based on one or more of these forms. In some dialects, the 1st singular form itself, with zero ending, could serve as a base; in other cases, such as where the 1st singular cannot be analysed as having zero ending, the base might be abstract, but the root vowel of the base would still be that of the 1st singular.[3] Given this structure, when strong verbs become weak and adopt the major formation, the root vowel of the base - that is, the A alternant - will automatically be spread throughout the paradigm. This type of change can therefore be reduced entirely to an interparadigmatic change. The former strong verb can be said to be adopting the structure of the major formation; intraparadigmatic levelling follows as a matter of course.

We should also note a further fact about the adoption of the major formation by former strong verbs. It seems that, while the past participle may undergo such a change independently of the preterite, and conversely the preterite may undergo it independently of the past participle, the preterite always undergoes this kind of change as a block.[4] Thus, while paradigms of the type:

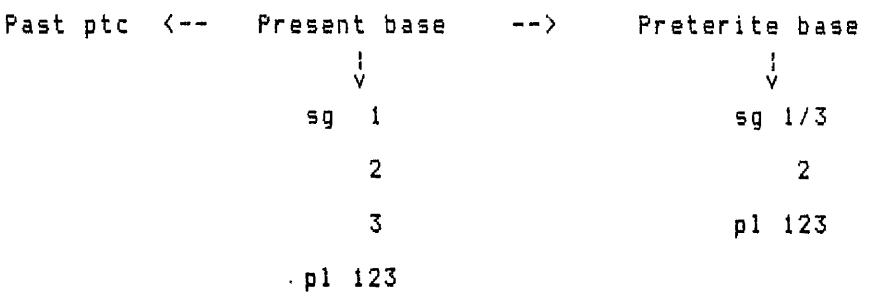
	Preterite	Past participle
sg 1/3	strong	weak
2	strong	
pl 123	strong	

are not uncommon, paradigms of the following type never occur:

	*Preterite
sg 1/3	strong
2	weak
pl 123	weak

where the C forms have forms of the major weak type, but the B forms have not. This suggests that the preterite forms are more closely associated with each other than with the other forms in the paradigm. (This is reminiscent of Bybee's (1980) observation that the relationships between forms of different tenses are more remote than those between forms of the same tense.) Specifically, we might suggest the following structure of rules for the major formation:

Diagram (i)



In some cases, the present tense base might be the actual 1st singular form. Similarly, the past tense base might be the actual 1st/3rd singular form. We may illustrate this structure using the major weak formation in dialect 39 (Lüdenscheid). For most verbs,[5] the actual endings of the forms are:

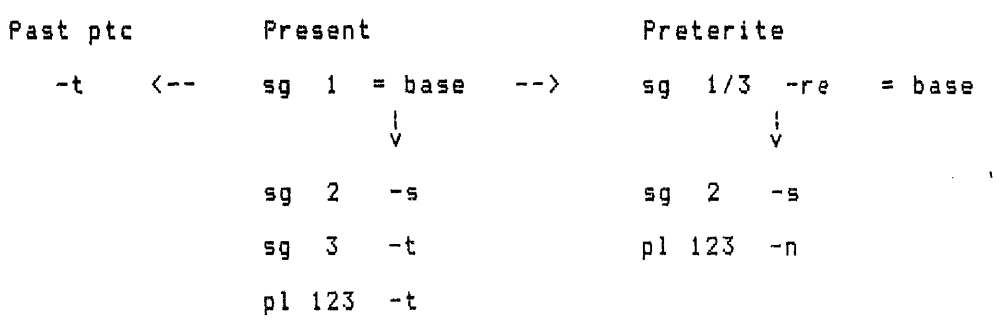
	Present		Preterite
sg 1	-*e*	sg 1	-*ere*
2	-*es*	2	-*eres*
3	-*et*	3	-*ere*
pl 123	-*et*	pl 123	-*eren*

Past participle
-*et*

Since the 1st singular present ending -*e* is carried right through the paradigm, this form can be analysed as a base for the whole paradigm. Similarly, since the -*e* of the 1st/3rd singular preterite is carried

throughout the preterite paradigm, this form can be analysed as the preterite base. This would imply the following derivational structure:

Diagram (ii)



It seems that the preterite subjunctive is also included in the "block" of forms which always act together in becoming weak. This may be accounted for by the fact that the major weak formation does not have separate forms for the two moods: consequently, if the preterite indicative adopts weak forms, these will also cover the preterite subjunctive, and vice versa.

Note on intraparadigmatic change within minor formations

If a structure similar to that diagrammed above is assumed to underly the major formation, then it is tempting to construct an analysis in which cases of intraparadigmatic change within the preterite of strong verbs can alternatively be analysed as the adoption of the rules deriving the major formation in this part of the paradigm (cf. Bybee and Brewer (1980)). These changes could then also in a sense be reduced to cases of (non-proportional) interparadigmatic change: the preterite of strong verbs would be adopting the stucture of the major type of weak verbs. Such an analysis will be attempted below, though it should be emphasised that it is tentative. Some problems would arise in applying it to all dialects, which we cannot go into here (involving, for example, the devoicing of word-final obstruents). Moreover, even if the analysis is considered convincing, it is not possible to account for all cases of intraparadigmatic change in this way.

In diagram (i) above, the rules derive the preterite forms *via* a preterite base (which might, as in diagram (ii), be the actual 1st/3rd

singular preterite form). There are therefore rules available in the major formation for deriving preterite forms from a preterite base. In a weak verb of the major type, the base on which these rules operate is itself derived by rules from the present base. However, the same rules might be used to derive strong preterite forms from a strong preterite base (again possibly the actual 1st/3rd singular preterite form). The only difference would be that in this case the preterite base itself would not have been derived by rules (or at least, not by the rules of the major formation). Such an analysis seems to be possible in some class I strong verbs in dialect 39 (Lüdenscheid). Consider the preterite (indicative) paradigm of a class I verb (KNI:P):

		Preterite (Indicative)
sg	1	kneip
	2	kneips
	3	kneip
pl	123	kneipen

This can be analysed in the same way as the preterite of the major formation:

Preterite			
sg	1/3 = base		= kneip
	↓		
sg	2	-s	= kneips
pl	123	-n	= kneip(*e*)n

(There are of course some problems here: an adjustment would be required in order to make the ending -n --> en in strong preterite forms. This could probably be achieved by an automatic phonological rule, since in strong verbs the ending -n would generally follow a consonant, whereas in weak verbs it follows -e-.)

The paradigm in question has arisen by an analogical change. The vowel ei is the reflex of Pre-OS *ai, the B alternant of class I, and this has evidently been extended throughout the paradigm. Before this extension took place, the analysis above would not have been possible, because the 1st/3rd singular would have had a different root vowel from the 2nd singular and the plural. After the extension, such

an analysis is, as we have suggested above, possible. We might therefore analyse the analogical change in question as the adoption, within the preterite of this class of strong verbs, of the major rules for deriving 2nd singular and plural preterite forms. In informal terms, these rules could be stated as follows:

2nd sg pret (ind): add -s to 1st/3rd sg (ind)

Pl pret (ind): add -n to 1st/3rd sg (ind)

(One complication is that for the strong verbs, mood would have to be specified, whereas in the major type of weak verbs there is no distinction in mood; the possibilities raised by this ambiguity in the major formation are discussed below). The adoption of these rules would thus automatically involve the extension of the root vowel of the 1st/3rd singular (the B alternant) to the 2nd singular and the plural.

Interesting possibilities are raised by the fact that the major rules are ambiguous between the indicative and the subjunctive preterite, since the two moods are not distinguished in the major paradigm. We assumed in the previous paragraphs that it is the 1st/3rd singular preterite *indicative* of strong verbs which is equivalent to the derived preterite base of the major formation, and which can therefore serve as input to the major rules for deriving the 2nd singular and the plural. However, the 1st/3rd singular preterite *subjunctive* of strong verbs could equally serve as input to these rules. Recall that we have met many cases where the alternant of the preterite subjunctive (that is, the C$^{\sim}$ alternant) has been analogically extended to the 2nd singular and the plural preterite indicative (the C forms); indeed, this also occurs in dialect 39 in strong verb classes other than I. Like the extension of the B alternant to the C forms discussed above for class I of dialect 39, this analogical extension can also be alternatively analysed as the adoption of the major rules within the strong preterite; but in this case the 1st/3rd singular preterite subjunctive rather than indicative would serve as the base on which the rules would operate:

2nd sg pret (ind) : 1st/3rd sg pret (subj) + s

Pl pret (ind): 1st/3rd sg pret (subj) + n

However, even if these analyses are considered to be plausible, there seem to be grounds for considering levelling within the preterite to be essentially different from the change of a verb from strong to weak: the former change tends to affect verbs series by series, in a fairly systematic way, while the latter change is sporadic. Moreover, this kind of analysis is by no means always possible. For example, there are a number of cases of intraparadigmatic levelling in the strong verbs which clearly involve the extension of the past participle alternant to the preterite (and many more where this is the most plausible interpretation of the facts; see for example development (c) in class I, p.65). It is not possible to analyse this kind of levelling as an adoption of the major rule system, for two reasons. Firstly, there is evidence suggesting that the preterite is derived independently of the past participle in the major weak formation: the preterite and past participle of strong verbs can become weak independently. There is therefore no justification for postulating rules deriving the preterite from the past participle in the major formation. Secondly, the endings of the past participle differ between the strong and weak verbs; so even if there were major rules deriving the preterite from the past participle, they could not apply straightforwardly to the strong verbs. There are also a few cases where the preterite alternant is extended to the past participle; similar problems would arise in accounting for these changes in terms of the adoption of existing major rules. Another point to note is that cases of "partial" levelling cannot be accounted for in terms of the adoption of major rules: after partial levelling, an alternation still remains where there is no such alternation in the major formation.

It is therefore impossible to reduce intraparadigmatic levelling to the adoption of existing rules deriving the major formation. That such analyses *are* sometimes possible is simply a result of the fact that the major formation generally lacks alternations, as we noted above.

Consequently, any levelling of alternations within a minor type of paradigm makes this paradigm more similar, at an abstract level, to the major formation. A different, and more generally applicable, approach to intraparadigmatic levelling within minor formations will be discussed in section 8.2.2.

8.2 Other analogical changes In this final section, we shall analyse the various types of analogical change other than those involving the movement of verbs into the major formation. The discussion will be divided into two parts, the first concentrating on interparadigmatic change (principally the interaction between the different classes of strong verbs), the second on intraparadigmatic change.

8.2.1 Interparadigmatic Two main types of interparadigmatic change may be distinguished: those which can be analysed in terms of the traditional notion of proportional analogy; and those which do not fit this model, and which we shall call "non-proportional" changes. In both cases, groups of verbs which previously had different alternants in, say, the preterite tense come to share the same alternant in this category. In the type which conforms to the proportional model, the two interacting groups of verbs have a point of contact, in that they share the same alternant in, for example, the present tense or the past participle, before the change. This shared alternant (A1 in the diagram below) acts as a "hinge" between the verbs which act as a model (class (1) in diagram below) and the verbs that change (class (2) in the diagram):

(1)	A1	B1	=	model	
(2)	A1	B2	>>	A1	B1

In other words, in this type of change, the replacement of the B alternant of class (1) by that of class (2) might be ascribed to the fact that the two classes share the same A alternant. If representative lexemes of the two classes are brought into the picture (x is a lexeme of class 1) and y a lexeme of class 2)), we can see how this change

conforms exactly to the traditional notion of proportional analogy:

xA1 : xB1 = yA1 : ? ? = yB1

In the changes encountered in our data, the alternants which actually change are most frequently the B and C alternants. The alternant which most commonly acts as a hinge between two interacting classes seems to be that of the past participle (the D alternant). An example of this is the widespread influence of class II strong verbs on class IV: both classes have the reflex of Pre-OS *o in the past participle. The alternant of the A forms (that is, the present tense) very rarely acts as a hinge. This may simply be due to the fact that there have been very few opportunities within the strong verb system for this kind of development, since in Pre-OS the classes were maximally differentiated in the present tense, and mergers by sound change have done little to alter this state of affairs (indeed, sound change has rather tended to introduce further differentiation in present tense alternants). There are, however, some cases where the alternant of the 2nd and 3rd singular present (A~) acts as a point of contact between two classes; this alternant has often been affected by umlaut and vowel shortening, and is less differentiated than the A alternant.

Some special instances of intraparadigmatic change also permit an alternative analysis in terms of interparadigmatic proportional analogy. These cases can arise in the (numerous) dialects where the reflex of Pre-OS *ai has merged with the reflex of *e:/*eo. Where these dialects show the extension of the B alternant of class I (Pre-OS *ai) to the C forms, this change may be analysed as an interaction with class VII (with *e:/*eo in both B and C forms). As a result of the merger between *ai and *e:/*eo, the B alternant of class I became identical to the alternant of both the B and the C forms of class VII:

	B	C		B	C
I	*ai	*i	>	*ai=*e:	*i
VII	*e:	*e:	>	*ai=*e:	*ai=*e:

(in order not to complicate the diagram unnecessarily, *e: is used to stand for both *e: and *eo)

This gave rise to conditions in which the C alternants of the two classes might be subject to proportional change on the basis of a shared B alternant. Thus, if the B alternant of class I is then extended to the C forms, this change can be analysed as proportional, with class VII as model, and the B alternant as a "hinge":

VII	*ai=*e:	*ai=*e:	=	model	
I	*ai=*e:	*i	>>	*ai=*e:	*ai=*e:

Moreover, there is some justification for assuming that this contact with class VII did have a significant influence on the levelling within class I: in the dialects where the merger has taken place, the opposite direction of levelling in class I (that is, the extension of the C/D alternant, i, to the B forms) is observed only very rarely.[6] An exactly parallel situation can arise involving classes II and VI, in dialects where the reflexes of Pre-OS *au and *o: have merged, and again this correlates very highly with the direction of levelling in class II.

It is not, however, possible simply to reduce intraparadigmatic change to a special case of interparadigmatic proportional analogy, for several reasons. Firstly, in the example of classes I and VII given above, the proportional analysis does not explain why it is always class VII that acts as a model; that is, under this analysis, changes of the form

*[I	*ai=*e:	*i	=	model	
VII	*ai=*e:	*ai=*e:	>>	*ai=*e:	*i]

should be just as likely as the change given above, yet they never occur in the data. Secondly, it is not only dialects where *ai and *e: have merged that show the extension of the B alternant to the C forms in class I: this same development is frequently observed in dialects where there is no possibility of interaction between classes I and VII. Similarly, parallel developments are found in other classes of strong verbs (such as classes IV/V) where no proportional model is available. Intraparadigmatic change, then, is not reducible to interparadigmatic change.[7]

We mentioned above that, in dialects with merger between *ai and

*e:, when classes I and VII interact, the outcome always favours the alternant of class VII. In this case, the direction of remodelling can be accounted for by an alternative analysis of this interaction, as an intraparadigmatic change within class I. We must now look at the direction of proportional change from a more general point of view, and ask whether our data allow us to draw any conclusions about this. That is, when two classes interact in this way, what (if anything) determines which of the two will act as the model for the other? The relative size of the classes seems to be important here. For example, the outcome of the widespread (but independent) changes involving an interaction between II and IV (on the basis of a shared past participle vowel) is always in favour of the former; and class II contains far more verbs than class IV. Similarly, when classes II and VI interact (and this interaction can be analysed as proportional in at least some dialects), it is nearly always the larger class II which acts as a model.

We shall now turn to the other type of interparadigmatic change, which we have called non-proportional analogy. Firstly, there are cases in our data where an account in terms of proportional analogy seems tenuous. Secondly, there are cases where an account in terms of proportional analogy is not available at all. One very widespread change involves the influence of class III(a) on the preterite of some class VII verbs, including in particular the three verbs GANG, FA:H, and HA:H. These two classes do not share the same A, A~ or D alternant,[8] and there is therefore no "hinge" element which could have facilitated the change. This type of development can be represented as follows:

A1	B1	=	model
A2	B2	>>	A2 B1

Note that the *direction* of remodelling may be accounted for by the same principle that was discussed with reference to proportional analogy. On the basis of our example involving the remodelling of the three verbs GANG, HA:H and FA:H, we can again argue that the relative size of the groups of verbs involved is an important factor in determining which will act as the model for the other.

As we mentioned in the detailed discussion of the data, an account in terms of Bybee and Slobin's (1982) concept of the "schema" might be of use in cases such as this. A schema is a representation of certain prototypical features of forms expressing a particular morphological category, such as preterite forms. In Bybee and Slobin's framework, the schema is essentially a lexical representation, in that it does not serve to generate forms, but rather *connects* lexically stored forms with each other.[9] The crucial point is that a schema connects, for example, preterite forms with other preterite forms, without reference to other forms in the paradigms of the lexical items concerned, such as the present tense forms. Preterite forms may then be attracted to a particular schema. Bybee and Slobin give examples of this phenomenon in English, both from historical evidence and from psycholinguistic experiments. The instances of non-proportional analogy in our data are essentially similar to their examples: they show that preterite forms of verbs can influence each other despite the fact that the verbs differ in their present tense and past participle forms.

According to Bybee and Slobin's work on English, the features represented in a schema are a prototypical root vowel and a prototypical root-final consonant. This is particularly interesting with regard to our example of the interaction between class III(a) and the class VII verbs GANG, FA:H and HA:H. These latter three verbs show a root-final ŋ in the preterite, and this is a common root-final consonant in class III(a). Moreover, within the strong verbs ŋ as a root-final consonant is unique to class III(a) and these class VII verbs. In this case, we could set up a schema such as ...uŋ for preterite forms. Our example of the influence of class III(a) preterites on certain class VII verbs therefore conforms precisely to their notion of verbs being attracted to a schema. It should be pointed out, however, that in other cases in our data the argument for the importance of the root-final consonant is more tenuous. The common factor in all the developments involving non-proportional change is that a particular preterite alternant becomes more "popular", and tends to spread to other verbs within the strong

verb system. Returning to our diagram of non-proportional analogy:

A1	B1	=	model	
A2	B2	>>	A2	B1

we could say that the alternant B1 has become, in a sense, a marker of the preterite, within the restricted domain of the strong verb system.

The motivation of the two types of interparadigmatic analogy, proportional and non-proportional, has so far not been discussed. Let us first look at this question from the point of view of the system as a whole, and consider to what extent interparadigmatic analogy of either type leads to simplification of the strong verb system. Before doing this, of course, it will be necessary to define our terms, and to clarify some notions which have so far simply been taken as understood. The strong verb system can be represented as a number of series of root vowels, or "alternants", each of which is associated with a particular morphological category (A, A~, B, C, C~ and D). A series will be defined as a particular set of A, A~, B, C, C~ and D alternants, characteristic of a group of verbs within the strong verb system. Series are defined as distinct if they differ from each other in at least one alternant.[10] For example,

A1	A~1	B1	C1	C~1	D1
A2	A~1	B1	C1	C~1	D1

are distinct as well as, obviously,

A1	A~1	B1	C1	C~1	D1
A2	A~2	B2	C2	C~2	D2

To study the effects of different types of change on the system as a whole, we will set up a hypothetical abstract system. For the sake of simplicity, we will restrict ourselves to three alternants, A, B, and D:

	morphological categories		
	A	B	D
series 1)	A1	B1	D1
2)	A2	B2	D2
etc.	.	.	.

It is assumed that the other series in the system are irrelevant, in that they do not interfere with the way in which the change affects the system as a whole. Occasionally, however, another series in the system does have a bearing on the effect of the change on the system as a whole, because it has alternants in common with the two interacting series. Cases like this (such as the second type of proportional change discussed below) will be pointed out, and the relevant series will be brought into the picture.

Mention should be made here of van Coetsem's (1980) model for describing ablaut, and of our reasons for not adopting it. Not only has van Coetsem studied the origin and development of the Germanic ablaut system (his theory was outlined in chapter 4); he has also constructed a framework for the representation of ablaut systems in general, which he hopes might be applicable to similar systems of internal inflection in other languages. The essence of van Coetsem's model is that it divides up the ablaut system into independent sections, consisting of one or more series of root vowels, such that within a section there is mutual predictability between series of root vowels and the consonant(s) following the root vowel.

Van Coetsem claims that his model makes it possible to quantify the cohesiveness of the ablaut system at any time, and hence also to observe the way in which diachronic changes affect the cohesiveness of the system. Broadly speaking, the greater the preponderance of rule-governed variation there is within the system, the more cohesive it is. The proliferation of independent sections (which occurs when a difference between two series becomes no longer predictable from the root-final consonant) reduces the cohesiveness of the system: the

variation is no longer rule-governed. If, on the other hand, series proliferate within a section (because of conditioned sound change), with mutual predictability between the series of vowels and the root-final consonants maintained, the cohesiveness of the system is not reduced.

One of the problems with van Coetsem's model is that it measures the "cohesiveness" rather than the simplicity of the system. That is, it measures a concept which van Coetsem himself has defined, and this may not correspond to any intuitive notion of simplicity. This is a potential source of confusion. For example, I encountered some difficulty in distinguishing the two concepts in Born's (1980) application of van Coetsem's model to the development of ablaut in standard German; though this may have been because of the interference of my own intuitions about simplicity. Another problem is that van Coetsem treats all the alternants within a series as on an equal footing (though he claims that the present tense alternant is important for classificatory purposes; this is presumably because it tends to be the most differentiated). He does not seek to establish relations of predictability between alternants within series, only between series and their root-final consonants. Such relations of predictability between alternants are, however, important for certain types of analogical change, in particular for proportional interparadigmatic change.

Although van Coetsem's model is perhaps appropriate for describing the effects of sound change on the system, it is in general not very revealing for the treatment of analogical change. In particular, it should be noted that interparadigmatic analogical change does not tend to affect the number of series in the system, but rather (a) the number of alternants for a given category, or (b) the relationship between alternants for different categories.

To return to the diagram on p.242, it is useful, when considering the effects of change on the system as a whole, to make reference to the two dimensions, "horizontal" and "vertical", in which the system is organised. In fact, analogical changes can be divided up according to the way in which they affect this abstract system.

Intraparadigmatic change affects only the "horizontal" dimension; the interaction is between alternants of the same series:

1) B1 D1 >> B1 B1

This type of change will be discussed in the next section.[11]

Non-proportional interparadigmatic analogy affects only the "vertical" dimension: the interaction is between alternants of different series, by virtue of the fact that they belong to a particular morphological category, and without reference to the other alternants within their respective series. This may be illustrated by a hypothetical change involving the spread of the B alternant of series 1) to series 2):

1) B1 = model

2) B2 >> B1

These two series did not have any alternants in common before the change, and this is therefore a purely "vertical" interaction between two alternants in the same "column". Proportional interparadigmatic change, by contrast, affects both the horizontal dimension and the vertical dimensions, in that it involves both the relationship between alternants within a series and the relationship between alternants of different series. To illustrate it, we must change the initial system slightly, so that the two interacting series have a common alternant:

1) A1 B1 D1

2) A2 B2 D1

If the B alternant of series 1) is then extended to series 2), this can be analysed as a proportional change, with the common D alternant, D1, acting as a hinge:

1) B1 D1 = model

2) B2 D1 >> B1 D1

The question we wish to ask, then, is whether either or both of our two types of interparadigmatic change result in any kind of simplification of the system as a whole. It will be more convenient to consider non-proportional change first. It is obvious from the hypothetical change given above that this type of change can potentially result in a reduction in the number of different B alternants: if B2 is

replaced by B1, then B2 will be eliminated from the system. The change can be said to have simplified the system in the sense that it has reduced the number of different alternants for a particular category.[12] The new system has only one B alternant where before there were two different ones:

1)	A1	B1	D1
2)	A2	B1	D2
etc.	.	.	.

This can also be reformulated in terms of probability: the probability of selecting a "correct" B alternant has increased, because there are fewer choices available.

It should be stressed that we are not talking here about whether the B alternant can be predicted given other forms in the paradigm. If these other forms *are* taken into account, it will be seen that the predictability of the B alternant has in fact remained unchanged. For example, the B alternant can be uniquely predicted[13] on the basis of the A alternant both before and after the change:

before: A1 implies B1 A2 implies B2

after: A1 implies B1 A2 implies B1

One point to note, however, is that the predictability of other alternants given the B alternant *is* affected, and indeed reduced, by the change. Of course, this is the inevitable result of a change which reduces the number of alternants in one part of the system without reference to the other parts. To take the A alternant as an example again: before the change there is a one-to-one correspondence between A and B alternants, so that not only can B be predicted given A (as shown above), but also A can be predicted given B:

B1 implies A1 B2 implies A2

After the change, these implications no longer hold, since B1 corresponds to both A1 *and* A2.

Should the change therefore be counted as a complication of the system in this respect? The answer to this question is probably negative, because the alternants should not be considered to be all on

an equal footing. As we discussed in chapter 2, the various criteria associated with markedness would suggest that the present tense is less marked than the preterite (for example, in the sample counted from Reuter, the present is much more frequent than the preterite in sections of direct sppech). On this assumption, we would expect the marked preterite (B alternant) to be predictable on the basis of the unmarked, more "basic", present (A alternant), but not necessarily vice versa (cf. Kuryłowicz 1949). It could therefore be argued that a change such as that discussed above, in which the predictability of B given A remains intact, and only the predictability of A given B is destroyed, has not complicated the system.[14]

We said above that non-proportional change can *potentially* result in a reduction in the number of different B alternants. The qualification "potentially" was used because the number of B alternants will actually be reduced only if the new alternant B1 is adopted by *all* the lexical items which previously had the alternant B2, so that the old alternant B2 is completely eliminated. In some cases in our data, this condition is met, and non-proportional change does indeed lead to a reduction in the number of different B alternants, and can therefore be said to have simplified the system. The number of B alternants has been reduced from seven in Pre-OS to as few as three in some Northern dialects (aided, admittedly, by phonological mergers). On the other hand, however, there are instances of non-proportional change where the condition is not met. Indeed, in many dialects the change which we have been using to exemplify non-proportional analogy (the adoption by some class VII verbs of the preterite vowel of class III(a)) fails to meet this requirement. The verbs FA:H and HA:H sometimes adopt the class III(a) u vowel while GANG retains its old preterite vowel i or e. In this case, then, some B forms with the alternant B2 remain unchanged, and the total number of B alternants in the system is not reduced:

B1 = model

B2 >> (a) B1

(b) unchanged:B2

Since the choice of B alternants within the system as a whole remains the same, the probability of selecting a "correct" B alternant is not increased. There has simply been a redistribution of lexical items between the B alternants B1 and B2. We shall call this kind of development "incomplete change". We can conclude, then, that non-proportional analogy does not always result in simplification, because it does not always affect all the items to which it could potentially apply. We shall encounter further examples of incomplete change in our discussion of proportional analogy.

Finally, we should mention "partial" non-proportional analogy (which should not be confused with incomplete change). In changes of this type, the number of alternants for a particular morphological category is not actually reduced, but the alternants become more similar (cf. "partial intraparadigmatic levelling", discussed in chapter 7 and in the next section). Consequently, generalisations are possible across the system as a whole, and the description of individual alternants is therefore simplified.

One candidate for such an analysis is the the frequent extension of the C^{w} alternant to the C forms in class VI.[15] At first sight, this may look like an intraparadigmatic change, but, for reasons that will be discussed in the next section, it is difficult to account for its motivation in intraparadigmatic terms. The change *can*, however, be analysed as a partial non-proportional interparadigmatic change: the C forms of class VI can be said to be following those of classes II and III (where the replacement of C by C^{w} does have intraparadigmatic motivation) in adopting a front rounded (that is, an umlauted) vowel:[16]

	C	C~		C	C~	
II	*u	*u+uml	>>	*u+uml	*u+ùml	= intra
III	*u	*u+uml	>>	*u+uml	*u+uml	= intra
VI	*o:	*o:+uml	>>	*o:+uml	*o:+uml	= inter

The number of C alternants in the system is not actually reduced in this change: the C forms of class VI still have their own distinctive root vowel. But this C alternant is now more similar to other C alternants within the system. As a result, the C forms within the system as a whole can now be described using fewer features. The generalisation can be made that if a C alternant is a rounded vowel, then it is also a front vowel.[17] It is therefore unnecessary to specify the feature [-back] for C alternants with the feature [+round].

We shall now turn to proportional interparadigmatic change. We shall again encounter the phenomenon of incomplete change,[18] but to begin with we shall ignore this factor, and assume, for the sake of simplicity, that all items are affected. Proportional change can reduce the number of alternants for a particular category, just like non-proportional change.[19] In the abstract example which we gave above:

B1	D1	=	model	
B2	D1	>>	B1	D1

the alternant B2 is eliminated from the system. The number of different B alternants in this part of the system is consequently reduced from two to one:[20]

	before change:			after change:		
1)	A1	B1	D1	A1	B1	D1
2)	A2	B2	D1	A2	B1	D1
etc.	.	.	.	.	.	.

Certain cases of interaction between classes II and VI exemplify this type of change. This is a change which occurs independently in several dialects, and which usually results in the preterite alternant of class II being extended to class VI. At least in some dialects where the change occurs, the past participle alternants of these two classes (Pre-OS *o and *a respectively) have merged, so that the change can be

analysed as proportional:

	B	D		
II	*au	*o=*a	=	model
VI	*o:	*a=*o	>>	*au *a=*o

As a result of this change, the class VI B alternant *o: is eliminated from the system, and since no other classes show this particular alternant, the total number of B alternants in the system is reduced.

Proportional change, then, can simplify the system in the same way as (complete) non-proportional change: the probability of selecting a "correct" B form is increased, because the choice is reduced. However, it can also be said to simplify the system in another respect, in that it introduces congruity between the B and D alternants. Before the change there were two B alternants, B1 and B2, corresponding to just one D alternant, D1; as a result of the change, the relationship between the B and D alternants is one-to-one. We can reformulate this in terms of predictability. At the earlier stage, the D alternant could be predicted given the B alternant, but not vice versa:

B1 implies D1 but D1 does not imply B1

B2 implies D1 but D1 does not imply B2

At the later stage, the predictability is mutual:

B1 implies D1 and D1 implies B1

In other words, the change establishes the predictability of B given D. To this extent, then, it can be said to have simplified the system.

So far we have only considered the effect on B, the element which changes, and D, the "hinge". How does the change affect the rest of the system? As far as the predictability of B from A is concerned, this is left intact. A, on the other hand, is no longer predictable from B; but as we discussed with reference to non-proportional change, this may be unimportant, because A is more "basic" than B.

We may conclude that the type of proportional change discussed so far has two (potentially) simplificatory effects: like non-proportional change, it reduces the number of alternants for a particular morphological category; and in addition, it introduces

relationships of predictability between the alternants for different categories. If all proportional changes were of this type, then interparadigmatic change could be analysed in a uniform way. It could be described as a tendency towards reduction in the number of alternants for a particular category; proportional changes would simply be special cases where the extra factor of predictability between alternants was present. However, such a uniform treatment proves to be impossible. Proportional changes occur which do not (even potentially) reduce the number of alternants for a particular category. They have only the *second* simplificatory effect mentioned above, involving predictability between alternants for different categories. It is therefore impossible to subsume all types of interparadigmatic change under a single heading. Instead, we might construct the following diagram to represent the different types of interparadigmatic change:

	reduces number of alternants for a particular category	introduces predictability between alternants for different categories
non-prop.	.	
prop.(i)	.	.
prop.(ii)		.

We shall look at a concrete example of this second type of proportional change, before looking at it in more abstract terms. It has been observed that, in many dialects, the preterite of at least some class IV verbs has been replaced by that of class II. Since these two classes share the same past participle vowel, the reflex of Pre-OS *o, the change can be analysed as a proportional change (we used this change as an example of proportional change with the past participle vowel as hinge, in the introduction to this chapter):[21]

	B	D		B	D
II	*au	*o	=	model	
IV	*a	*o	>>	*au	*o

It appears at first sight that this change has eliminated the B alternant of class IV (the reflex of Pre-OS *a), and therefore reduced the number of B alternants in the system. However, when the rest of the system is taken into account, this impression proves to be incorrect. In particular, class V should be brought into the picture. In the original system, class V shared the same B alternant, *a, (and the same C alternant, *a:) as class IV, but differed in its D alternant:

	B	D
V	*a	*e

The class V B alternant generally remains unaffected by any influence from class II. This fact suggests that the interaction between classes II and IV really is based on their common D alternant, and is evidence of the validity of the notion of proportional change. Moreover, because the B alternant *a remains in the system, the proportional change between classes II and IV fails to reduce the total number of B alternants in the system:[22]

before change:			after change:		
	B	D		B	D
II	*au	*o	II	*au	*o
IV	*a	*o	IV	*au	*o
V	*a	*e	V	*a	*e

Consequently, we cannot say that all interparadigmatic changes tend to reduce the number of alternants for a particular morphological category.

We must therefore investigate whether it can be said to simplify the system in some other respect. In fact, the result of this change is to make the B and the D alternants mutually predictable in this part of the system. This will be clearer if we represent the systems before and after the change in abstract terms (excluding, for the present, the A alternants):

	before change:		after change:	
1)=II	B1	D1	B1	D1
2)=IV	B2	D1	B1	D1
3)=V	B2	D2	B2	D2

Before the change, the B alternant was not always predictable from the D alternant, nor the D from the B alternant:

B1 implies D1 but D1 does not imply B1

D2 implies B2 but B2 does not imply D2

As a result of the change, the B and D alternants have become mutually predictable:

B1 implies D1 and D1 implies B1

B2 implies D2 and D2 implies B2

However, a problem seems to arise if we now bring the A alternants into the picture. Most class IV verbs share the same A alternant (Pre-OS *e) as class V, both before and after the change, while class II has a different alternant (either Pre-OS *u: or *eo ; for the sake of simplicity we will include only *eo):

	before change:			after change:		
	A	B	D	A	B	D
II	*eo	*au	*o	*eo	*au	*o
IV	*e	*a	*o	*e	*au	*o
V	*e	*a	*e	*e	*a	*e

Note that none of the vertical columns has three different alternants, but three distinct series must be recognised because of the distribution of alternants. This can be represented in abstract terms as follows:[23]

before change:			after change:		
A1	B1	D1	A1	B1	D1
A2	B2	D1	A2	B1	D1
A2	B2	D2	A2	B2	D2

Before the change, the A and B alternants were mutually predictable:

A1 implies B1 and B1 implies A1

A2 implies B2 and B2 implies A2

This mutual predictability is destroyed by the change; in the resultant system, the B alternant cannot always be predicted from the A alternant, nor the A from the B alternant:

A1 implies B1 but B1 does not imply A1

B2 implies A2 but A2 does not imply B2

In other words, the system has been rearranged, so that the B alternants are distributed according to the D rather than the A alternants. Congruity between the B and the D alternants has been achieved, but only at the expense of the congruity between the A and B alternants. While arguments from markedness can be used (as on p.246) to show that the loss of the predictability of A given B is perhaps not so important, they cannot, of course, be applied to the loss of the predictability of B given A.

However, there is a sense in which this rearrangement could be said to consitute a simplification of the system. If the B alternants are distributed according to the A alternants, as in the original system, then the B forms are only predictable given the additional fact that the verb in question is strong, because this is not apparent from any particular A form considered in isolation (though it may be apparent from the present tense paradigm as a whole, if there is an alternation between A and A~). Thus, the predictability of B forms from A forms can never be absolute. The past participle (D) form, on the other hand, indicates immediately whether a verb is strong or not: strong verbs have the ending -e(n), while weak verbs of all types have -(e)t. (Indeed, in some dialects the past participle may be the only diagnostic of whether a verb is strong or not: not only are present tense forms ambiguous between strong and weak, but strong preterite forms have a similar structure to some minor types of weak preterite). There are, therefore, reasons for considering a system in which the B alternants are predictable from the D alternants to be simpler than one in which they are predictable from the A alternants: the predictability of the B forms

will then be absolute, rather than relative. Since as a result of the interaction between classes II and IV this part of the system more nearly approaches this ideal, the change could be said to be simplificatory.

It should be pointed out, however, that this change is only a local simplification. We have argued that it is preferable for prediction of the B alternant to proceed from the D rather than the A alternant.[24] However, in the rest of the strong verb system, prediction of the B alternant can generally proceed only from the A alternant: it is the A alternant which is most highly differentiated, and it is not uncommon for verbs with the same D alternant to have different A alternants. Thus, although the change under discussion simplifies part of the system, it could even be said to complicate the system as a whole, because it means that in some parts of the system B forms are predictable from D forms, while in others they are predictable from A forms (given the fact that the verb is strong).[25]

Like the other types of interparadigmatic change we have discussed so far, this type of change is sometimes "incomplete", in that some items in class IV remain unaffected:

	B	D			B	D
II	*au	*o	=		model	
IV	*a	*o	>>	(a)	*au	*o
				(b)	unchanged	

Under these circumstances, congruity between the B and D alternants is not achieved, and the change therefore fails to simplify even this part of the system.

We may conclude that all the various types of interparadigmatic change encountered in our data have a potentially simplificatory effect, at least on a part of the system, but that they sometimes fail to result in simplification, because not all eligible items actually change. On the assumption that diachronic change reflects the structure of the synchronic grammar (for a more cautious approach, see below, pp.261f.),

this bears on the question of the lexical storage versus generation by rule of minor formations.[26] For, if strong verb forms were generated by rule (as in the analyses of the German ablaut system by Wurzel (1970) and Barbour (1982); see the discussion below), we would expect change to be implemented "from the top down", by a change in the rule system, and hence to affect all forms generated by the rules. We have found, however, that some eligible items may remain unaffected by change. This might lead us to prefer an analysis in which strong verb forms (or at least, some forms from each strong verb) are lexically stored. This would presumably be the analysis preferred by Natural Generative Phonologists such as Hudson (1974); indeed, Vennemann (1974) has even suggested that the forms of the productive morphology should also be lexically stored. Any relationships of predictability which could be established within the strong verb system, either on the basis of other forms in the paradigm, or on the basis of the root-final consonant, would then have to be expressed in the grammar as connective relationships, associating lexically stored forms, rather than as generative rules. Change would then be implemented "from the bottom up", by changes in individual verbs, which might cumulatively have an effect on the system as a whole.

Let us therefore investigate whether change might also be *motivated*, as well as implemented, "from the bottom up". It is in fact possible to find a motivation for the various types of interparadigmatic change from the point of view of individual lexical items (though this is not as straightforward as in the case of intraparadigmatic change). Consider first non-proportional change. We mentioned earlier that when two classes interact, the one which acts as a model for the other tends to be the class which contains the greater number of verbs. This provides us with a possible motivation for non-proportional change from the point of view of individual verbs. When an individual verb is influenced by another series, it is adopting a B alternant which (regardless of other alternants in the series) is more likely, because it occurs in more verbs. As we have seen, it may be attracted to a

particular schema because of its root-final consonant (though there are cases where arguments of this kind are more tenuous). This may again be expressed in terms of probability: a verb is adopting the B alternant that is most common in conjunction with its particular root-final consonant.

A similar account could be given for the motivation of proportional change. We noted that, in this kind of change, just as in non-proportional change, it is the class which contains more verbs which tends to act as the model. Again, then, we can say that verbs are adopting a more probable alternant. The difference is that in this case, the series interact because they share an alternant elsewhere in the paradigm (such as the D alternant), rather than a similar root-final consonant. They could be said to be adopting a more likely B alternant given, for example, their particular D alternant.

It appears, however, that these accounts, in which change is dealt with at the level of individual items, are inadequate. The crucial point is that they cannot explain why interparadigmatic change often applies quite systematically to all the members of a particular series.[27] It is not, on the whole, as sporadic as, for example, the movement of strong verbs into the major weak formation. Since change does not, on the whole, affect single lexical items, but rather groups of verbs, it would seem unsatisfactory to claim that it is motivated solely at the level of individual items. Moreover, in all the cases which we have discussed, interparadigmatic change is at least potentially simplificatory; that is, it *would* simplify the system if all eligible items were affected, and in some cases it does indeed result in simplification.

We must also consider an important fact about incomplete change which we have not yet mentioned: it is generally only the most frequent verbs which fail to change. For example, of the three class VII verbs GANG, FA:H and HA:H, which tend to acquire the B alternant of class III(a), it is the highly frequent verb GANG which most often resists this change. Equally, within class IV, it is the highly frequent verbs

NEM and KUM which tend to offer the greatest resistance to the influence of class II.[28]

There seems, then, to be a conflict between two aspects of interparadigmatic change. On the one hand, all the cases we have encountered would simplify at least part of the system in some respect if they were allowed to run their course. Moreover, we have suggested that, although it is possible to motivate change from the point of view of individual items, it is inadequate to view change simply as a phenomenon affecting individual verbs, because verbs within a series tend to develop together. The units which interact seem to be larger than individual lexical items: in fact, they are usually whole series (or even groups of series, such as class VII), with the exception, in some cases, of highly frequent verbs. Change would therefore seem to be motivated "from the top down". On the other hand, however, the phenomenon of incomplete change suggests that change is not *implemented* "from the top down". That is, it would seem to be implemented not by rule change, but rather by changes in individual items. Note, however, that if highly frequent items were discounted in some way, an account in which change was also implemented from the top down would be possible.

Let us now explore two possible solutions to the problems posed by the diachronic developments. Both solutions involve the motivation of change in terms of its simplificatory effect on the system as a whole; in other words, change is *motivated* "from the top down". However, the two proposals differ in the way in which change is *implemented*. Firstly, it could be argued that change is in fact also implemented "from the top down", but that highly frequent items may escape the effects of change. The second solution is of a teleological nature.[29] Although change would be motivated "from the top down", it would be implemented "from the bottom up", by changes in individual items. Some of these items might in fact fail to change, so that the simplification "aimed at" would not be achieved.

These two diachronic solutions obviously imply different solutions to the synchronic problem. The first diachronic account would

imply a synchronic analysis in which the forms of most strong verbs are generated by rule, but those of particularly frequent verbs are lexically stored. That is, they are in a sense outside the system, even though on formal grounds they would be included in the system. Their forms *could* be generated by the rules, but in fact it would be argued that they are lexically stored. The different treatment of highly frequent forms would generally be covert, but would become overt when a change in the rules took place, and these lexically stored forms failed to change.

As we have already mentioned, Wurzel (1970) and more recently Barbour (1982) have constructed analyses in which strong verb forms are generated by rule.[30] In Wurzel's account, for example, strong verbs would be labelled in one of three ways in the lexicon, using a system of two "features": [+past participle vowel = stem vowel], [+past participle vowel = preterite vowel] and [-past participle vowel = stem vowel, -past participle vowel = preterite vowel]. The "stem" vowel referred to here is the vowel of the infinitive, though sometimes in an abstract form. The forms of nearly all the strong verbs, classified in this way, could then be generated from a single base, containing this stem vowel, by rules which would also make reference to phonological characteristics of the stem (such as the type of consonant following the root). Only the forms of highly idiosyncratic verbs would be lexically stored.

Note that if the verbs which tended to be excluded from interparadigmatic change were just these idiosyncratic verbs, then an analysis like Wurzel's might be plausible. It would then be possible to maintain that change is implemented from the top down, and that the idiosyncratic verbs are naturally excluded from change because they are not generated by rule. In some cases, this analysis would appear to fit the facts, in that the verbs which resist change are idiosyncratic ones: GANG has a highly idiosyncratic present tense (deriving historically from a different root, GA:); and KUM also differs from the other class IV verbs in its A alternant (Pre-OS *u rather than *e). However, this analysis will not work in the case of NEM, which was just like any other

class IV verb until it failed to be influenced by class II.

As we mentioned earlier, the factor which is common to all three verbs, GANG, KUM and NEM, is frequency. It therefore seems more convincing to attribute their widespread failure to undergo change to this factor. Of course, frequency and idiosyncrasy often go hand in hand. We would argue, however, that frequency, rather than idiosyncrasy, is primary. Frequent forms tend to retain archaic features (and also any alternations which have been introduced by sound change); that is, they are less prone to the pressures of the system. In this way, they tend to *become* idiosyncratic. (In the case of NEM, we can actually see this development in progress). In this first alternative, then, an account would be postulated in which the forms of these highly frequent verbs would be lexically stored, while those of other verbs would be generated by rule.

The second alternative diachronic solution would imply a synchronic analysis in which the forms (or at least some forms) of *all* strong verbs would be lexically stored. The forms of highly frequent verbs would, however, differ from those of the majority of strong verb forms, in that they would have more of the properties of independent lexical items, and hence be less subject to pressure on the basis of their membership of a particular paradigm. The majority of lexically stored strong verb forms would still be closely tied to their morphological function within a paradigm: they would be subject to pressure on the basis of the particular morphological category which they express, and on the basis of their relationship with other members of their paradigm. We could then account for the resistance of highly frequent items to analogical change by arguing that they would be more independent of the other members of their paradigm, and less subject to pressure on the basis of their morphological status. As a result of this resistance by highly frequent forms, of course, the potential simplification which originally motivated the change might not in fact occur.

There seem to be some grounds for favouring the second

alternative. One possible argument hinges on the desirability of describing analogical change in as uniform a way as possible. Although it has been shown that frequent forms may behave differently from the majority of strong verbs, in that they tend to resist analogical change, they do nevertheless sometimes submit to the pressure of the system. Although the verbs GANG, KUM and NEM do manifest a tendency to resist change, there are a number of dialects where they *have* undergone analogical change (and where the system has consequently been simplified). If we adopted the first alternative, in which a diametric opposition is maintained between the majority of strong verbs, with forms generated by rules, and highly frequent verbs with lexically stored forms, then cases like this, where highly frequent verbs do in fact undergo an identical change to other strong verbs, would cause problems. We would be forced to account for the same change in two different ways for the two sets of verbs. For the "normal" strong verbs, the change would be implemented by rule change, while for the very frequent, lexically stored verbs, it would have to be implemented by a change in individual items. In other words, for the change in the frequent verbs, we would still have to adopt the teleological account associated with the second alternative outlined above. Thus, a more unified account would be achieved if lexical storage were postulated for the forms of all the strong verbs. The difference between the majority of strong verbs and the highly frequent verbs would then be a matter of degree: the frequent verbs would be more like independent lexical items, and would be more resistant to change.

We have so far been assuming that diachronic change is a direct "window" on synchronic structure (Kiparsky 1968), and have found that, under this assumption, the frequency of forms would have to play a part in the way that forms are represented in the grammar. In both of the alternative synchronic analyses which we have suggested, considerable weight is placed on the notion of frequency: items which are formally similar are represented differently in the grammar because they differ in frequency. Bybee and Brewer's (1980) notion of autonomy would seem

to be relevant here: frequency is one of the factors which they claim causes forms to be stored as autonomous lexical wholes (rather than being derived by rule from other forms). Moreover, it is interesting to note, with regard to the second alternative, that Bybee and Brewer regard autonomy as relative rather than absolute; that is, forms can be autonomous to a greater or lesser degree.

However, the fact that this approach forces us to place such an importance on frequency within the grammar might lead us to adopt a more cautious view of the way in which diachronic developments reflect synchronic structure. Moreover, other factors, apart from frequency, also support a more cautious view. Firstly, while we have argued that the analogical changes which we have encountered constitute simplifications in some sense, they would not necessarily count as the simplifications of a formal rule system. For example, it is difficult to account for non-proportional change in terms of "rule simplification", because it does not involve relationships of predictability between alternants, but rather the general incidence of a particular alternant for a particular morphological category, and perhaps also its association with a particular root-final consonant. We mentioned above that Bybee and Slobin's (1982) notion of the schema was particularly useful in understanding this type of change; it is perhaps significant (see below) that they found schemas to be of particular importance in child language.

Secondly, the simplifications which result from change are sometimes local rather than global simplifications: the interaction between classes II and IV was an instance of local simplification, and we shall see in the next section that intraparadigmatic change also operates locally, at the level of the individual series.

It is notable that Kiparsky himself (1980, 1982a) has tempered his earlier (1968) claim. Diachronic change does not reflect synchronic structure in a straightforward fashion, because performance factors, as well as the structure of grammar, play an important part in diachronic change: "Language acquisition and use cannot be idealized away from the

theory of change as they can from formal grammar...The theories of grammar, language acquisition, and language use have to be considered as interacting subsystems in the explanation of change." (Kiparsky 1980, p.415). In particular, then, language acquisition must be taken into account.

Two aspects seem to be important here. Firstly, children do not, of course, have direct access to the *grammars* of adults, but must construct their grammar on the basis of the language *use* of adults (cf. Andersen 1973). Thus, features of language use, such as frequency, may play an important part in diachronic developments, because of their significance in language acquisition. In a sense, then, the conflict between implementation and motivation may be solved by saying that change is not be actively "implemented" at all, but occurs in the transmission of language between generations.

Secondly, as Kiparsky points out (1982a), language acquisition is a gradual rather than an instantaneous process. We may assume that children postulate a series of different grammars during the course of acquisition. The possibility that features of early grammars may sometimes persist into adulthood provides a possible source of diachronic change. In particular, as Kiparsky points out, analogical changes which are locally simplificatory, but which fail to simplify (or which even complicate) the system as a whole, may be the result of generalisations made on the basis of inadequate data, during the process of language acquisition. We would in addition suggest that analogical changes which cannot be expressed in terms of the simplification of a formal rule system (such as non-proportional change) may reflect particular *types* of generalisation, such as the schema, which are characteristic of child language (cf. Bybee and Slobin 1982).

8.2.2 Intraparadigmatic Intraparadigmatic change involves the levelling of alternations between forms of the same paradigm. With specific reference to alternations in root vowels, we can say that the root vowel of the forms expressing one morphological category is extended to the forms expressing another morphological category.[31] As we discussed in chapter 1, it has been observed (Kuryłowicz 1949, Mańczak 1966, Bybee and Brewer 1980) that the direction which this extension takes is generally symptomatic of the markedness relations between the categories expressed by the forms in question: when levelling takes place, alternants associated with unmarked categories are extended, replacing alternants associated with marked categories.

The degree to which individual changes follow this direction has been pointed out in the analysis of the data, and we will not repeat the details here. Two general points can, however, be made. Firstly, with respect to the parameter of person, levelling within the singular present of strong verbs is most frequently executed by the extension of the 1st person alternant to the 2nd and 3rd persons. This would not be expected according to most criteria of markedness, which analyse the 3rd person as least marked. However, it does reflect the relations between the persons in Mayerthaler's (1980) theory of markedness (based on prototypical speaker attributes), in which the 1st person is analysed as least marked. Note also that in many dialects the 1st singular present can be analysed as having zero inflection (see chapter 1).

Secondly, it is notable that all cases which at first sight appear to involve the extension of the plural and 2nd singular preterite alternant to the 1st and 3rd singular preterite (that is, in the direction marked --> unmarked, according to all criteria of markedness) can in fact be accounted for in other ways. For example, they can alternatively be analysed as cases of the extension of the past participle alternant into the preterite, or as cases of interparadigmatic change. It is worth mentioning that such alternative analyses would sometimes be ruled out if we did not accept non-proportional interparadigmatic analogy as a possible kind of change;

but there is clear evidence, on independent grounds, that such non-proportional changes do occur.

In the previous section we constructed an abstract system, consisting of series of root vowels, in order to investigate the effects of different types of interparadigmatic change on a system. If we construct the same abstract system used there:

	morphological categories		
	A	B	D
series 1)	A1	B1	D1
2)	A2	B2	D2
etc.	.	.	.

If we now look at the effect of intraparadigmatic change on this system, we can say that in most cases it results in a reduction in the number of alternants in the horizontal dimension. For example, as a result of the change:

B1 D1 >> B1 B1

the number of alternants in series (1) is reduced, from three to two. This reduction generally occurs by the replacement of an alternant associated with a more marked category (or set of categories) by an alternant associated with a less marked category.

There are also some cases of "partial levelling", generally involving the present tense alternants A and A~:

	A	A~		A	A~
e.g.	x	y+uml	>>	x	x+uml

or

x: y >> x: x

Here a relatively opaque relationship between two alternants is replaced by a more transparent one (see chapter 7). For example, an ablaut alternation is replaced by an umlaut relationship; or an e-raising alternation is replaced by a simple alternation in vowel length. This type of change does not reduce the actual number of alternants in a series, but it does reduce the number of features needed to describe the

alternants in the series (cf. partial non-proportional interparadigmatic analogy, in which the number of alternants for a particular category across series is not reduced, but the alternants become more similar).

There seem to be some restrictions on the way in which reduction (either in the number of alternants within a series or in the number of features needed to describe them) may occur. Levelling occurs freely between the preterite (indicative) and the past participle, between the preterite indicative and subjunctive, and within the preterite indicative. However, there is rarely levelling between the present and the preterite, except within the weak verbs, and in the special case when a strong verb becomes weak.[32] The reason for this appears to be functional. In the strong verbs, vowel alternation is the principal marker distinguishing the present and the preterite, and as such cannot be levelled out. In the weak verbs, on the other hand, the present is distinguished from the preterite by a dental suffix; the vowel alternations therefore play a subsidiary role, and can be levelled out. The possibility of levelling in the strong verbs (a) between persons and numbers within the preterite and (b) between the preterite and the past participle, can be accounted for similarly. In case (a), the forms are distinguished both by different endings, and by accompanying personal pronouns. In case (b), although the strong past participle suffix (-en or -e) coincides with that of the strong preterite plural, the past participle is nevertheless distinguished by the prefix ge- in most dialects; and even in dialects where this prefix has been lost, the main function of the past participle, as one of the elements in the perfect tense formation, is clearly distinguished from the preterite by the accompanying auxiliary "be" or "have".

Note, however, that levelling *does* take place between the preterite indicative and subjunctive of strong verbs, even though vowel alternation is sometimes the only distiguishing feature between these two categories. We might speculate that the distinction had already lost its functional importance before levelling took place. In support

of this suggestion, we may point firstly to the complete lack of separate forms for the two moods in the major weak formations of all dialects; and secondly to the situation in texts by Reuter (1859), where separate "indicative" and "subjunctive" forms are available for strong verbs, but seem to be used interchangeably, with no distinction in meaning.

Our data suggest that intraparadigmatic change, like interparadigmatic change, operates series by series, rather than item by item. Although it would not be difficult to find a motivation for intraparadigmatic change in terms of individual items (for example, the paradigms of all the individual verbs within a series which has undergone reduction can be said to have been simplified, in that they contain fewer alternants), such an account proves to be inadequate. Apart from highly frequent lexical items such as NEM and KUM, which often resist change, there are very few cases in the data where intraparadigmatic change has affected some items in a series and not others; this applies especially to those series containing large numbers of verbs,[33] such as class I.

Note that this reduction in the number of alternants within a series cannot, however, be analysed as a single change across the system as a whole. For example, the resultant system after the abstract change shown above is:

A1	B1	B1	D1
A2	B2	C2	D2

The alternation which has been levelled out in series (1) is still present in series (2). There is strong evidence that it is indeed at the level of the series, rather than over the system as a whole, that intraparadigmatic change operates. For example, in MLG levelling between B and C has begun in class III, but not elsewhere. Some modern dialects also show levelling between B and C in some classes but not in others; for example, some Dutch dialects have levelled the distinction in all but classes IV and V. Moreover, even in dialects which have levelled out this alternation completely, different series present different types of levelling (although classes I and II generally level

in the same way). For example, there are many dialects in which the alternation between B and C has been levelled in classes I and II by the extension of the B alternant throughout the preterite, but in class III by the extension of the C/D alternant to the whole of the preterite.

While many intraparadigmatic changes can be described in terms of a reduction in the number of alternants in a series, or in the features needed to describe them, not all changes fit this model. Sometimes forms are merely redistributed between alternants. There are two main examples of this type of change, each of which occurs several times in the data. Firstly, there are dialects where the 2nd singular preterite has adopted the alternant of the 1st/3rd singular preterite (indicative), but the plural has not. There is therefore still a distinction between B and C, but the distribution of forms between the alternants has changed. Moreover, in dialects where levelling between B and C is actually in progress, the 2nd singular preterite is often affected before the plural preterite. This kind of change can be represented as follows:

B	C		B	C
sg 13	sg 2	>>	sg	pl
	pl 123			

There is obviously no reduction in the actual number of alternants within the paradigm, but simply a redistribution of forms between the B and C alternants. Secondly, if the B alternant is extended to the C forms, but the C forms already share the alternant of another category, then no reduction takes place. An example of this would be the frequent extension of the B alternant to the C forms in class I, where the C forms previously shared the same alternant as the C^ and D forms:

*ai	*i		*ai	*i
B	C/C˜/D	>>	B/C	C˜/D
ind sg 13	ind sg 2		ind	subj
	ind pl 123			past ptc
	subj			
	past ptc			

Another example of a similar kind is found in dialect 23 (Göddeckenrode), for example, where the C forms previously showed an umlauted vowel (= C˜), but where umlaut seems now to be receding in these forms, to be replaced by the B alternant. (This change also provides examples of the first type, in that the 2nd singular seems to be affected more strongly than the plural preterite). This can be represented as follows:

(earlier change:

B	C	C˜	>>	B	C˜	= reduction)

recent change:

B	C˜		B	C˜
ind sg 13	ind sg 2	>>	ind	subj
	ind pl 123			
	subj			

Again, the number of alternants is not reduced; rather, the C forms have "switched their allegiance" from C˜ to B.

These changes all point to a tendency for distinctions between alternants to correspond to distinctions between morphological categories (in other words, form tends to mirror content). This tendency can also be described formally in terms of simplification. After all of these changes, the distribution of alternants among categories can be stated much more economically than before. Indeed, in two of the cases, it is reduced to a simple category opposition: singular versus plural, or indicative versus subjunctive. A similar tendency has also been observed by Bybee and Brewer (1980). In their data on Provençal preterite forms (in which the 3rd plural form acts as a base) they found that 1st and 2nd singular forms were remodelled on

the 3rd singular more frequently than were plural forms: "We hypothesise that the 1st singular and 2nd singular forms are more likely to be re-formed because they are more closely related to the 3rd singular than the plurals".

Having isolated two ways in which intraparadigmatic change can lead to a simplification of at least part of the system, we may now ask whether all intraparadigmatic change can be described in one of these two ways. There are two apparent cases of intraparadigmatic change which cause some problems. Let us first consider the extension of the umlauted C˜ alternant to the C forms in class VI. Recall that in class VI, there was originally no distinction between the B and C alternants:

before change: B = C C˜

Therefore, when C˜ is extended to the C forms, there is no reduction in the number of alternants:

after change: B C˜ C˜

Equally, however, the change does not simplify the distribution of forms between alternants. Indeed, it makes it more complicated:

B/C	C˜	>>	B	C˜
ind	subj		ind sg 13	ind sg 2
			ind pl 123	
			subj	

However, as we discussed in the section on interparadigmatic change (p.247), this change can be accounted for as a partial (non-proportional) *inter*paradigmatic change: the C forms of class VI can be said to be following those of classes II and III (where the change is motivated intraparadigmatically) in adopting an umlauted (front rounded) vowel.

The second case involves the change in the distribution of the e-raising alternation within the present tense of strong verbs of classes II(a), III(b), IV and V, between OS and MLG. In OS, the alternants were distributed according to the category of number:

[+raised]	[-raised]
singular	plural
	infinitive

By MLG, this alternation had adopted the following pattern:

[+raised]	[-raised]
sg 2	sg 1
sg 3	plural
	infinitive

In classes IV and V, the new distribution arose by sound change in MLG (see chapter 5, p.154), though it cannot be accounted for by sound change in some of the modern dialects. In class II(a) (and in classes IV and V in dialects where the account in terms of phonoloigcal change will not work), the change can in fact be analysed as a reduction in the number of alternants within the series, because of the intersecting alternation in length which had arisen by MLG. We can postulate an intervening stage in which there were three alternants within the present tense:

*[+raised]	[+raised]	[-raised]
[+long]	[-long]	[+long]
sg 1	sg 2	plural
	sg 3	infinitive

The MLG system, with two alternants instead of three, can therefore be analysed as a simplification of this intervening system (though the result of this reduction may seem surprising: the 1st singular joins the plural and infinitive rather than, as we might perhaps expect, the 2nd and 3rd singular).

In class III(b), however, where no alternation in length arose, the development cannot be analysed as a reduction in the number of alternants within the series. Nor can it be analysed as a simplification in the distribution of alternants: before the change, the alternants were distributed according to the category of number alone; after the change, the distribution is also governed by the category of person. Neither of our two principles, therefore, will cover the change

in class III(b). We could, however, argue that the alternants have been redistributed according to a pattern which is prevalent elsewhere in the strong verb system. Both the alternations in vowel length and the umlaut alternation involve a contrast between the 1st singular, plural and infinitive on the one hand, and the 2nd and 3rd singular on the other.

It therefore seems that a particular pattern, which is not necessarily the simplest, may become established within the language, and may then spread to other verbs. We must therefore modify our principle of redistribution: alternants may be redistributed either according to a pattern which is simpler or, as here, according to a pattern which is commonly found within the language. Note that the second part of this principle also accounts for the direction of the change within class II(a): we can say that the 1st singular adopts the alternant of the plural and infinitive rather than the 2nd and 3rd singular because this pattern of distribution has become established within the language. This would also provide an alternative account for the development in the preterite of class VI, discussed above.

8.3 Final comments

It should firstly be pointed out that the conclusions below apply only to analogical changes *within* the strong verb system, where the verbs concerned are strong both before and after the change. The movement of strong verbs into the major weak formation, on the other hand (discussed in section 8.1), affects only individual verbs; it involves a change in class membership of the verb concerned, and does not affect the structure of the verb system as a whole.

I have attempted in the previous section to provide as uniform an account as possible of the analogical changes observed within the strong verb system. There is evidence that these changes within the strong verb system affect whole series of verbs rather than individual lexical items, though highly frequent verbs may "escape" change. For each type of change, interparadigmatic and intraparadigmatic, two

sub-types have been isolated:

interparadigmatic

(i)	(ii)
tends to reduce the number of alternants for a particular category (or the number of features required to describe the alternants)	tends to introduce predictability between alternants for different categories

intraparadigmatic

(i)	(ii)
tends to reduce the number of alternants within a series (or the number of features required to describe the alternants)	tends to redistribute alternants with respect to morphological categories; the new pattern is either one which can be described in simpler terms, or one which is already established within the language

All four types of change may be described as simplificatory in some sense, in that they tend towards a reduction in the number of alternants, or a simplification in their distribution. However, they do not necessarily lead to an overall simplification of the strong verb system, for three reasons. Firstly, frequent items may fail to change (hence the qualification "tends to..." in each case). Secondly, even if all potential candidates do undergo the change, the resultant simplification is often only local. For example, predictability of the preterite alternant on the basis of the past participle alternant may be achieved in just one part of the system. Thirdly, the simplification achieved may not always be analysable as a simplification in rules (either generating or connecting forms). This is particularly true of the first type of interparadigmatic change, which involves the general incidence of an alternant within the system, without reference to other

alternants within the same series. It has been suggested that Bybee and Slobin's (1982) notion of the "schema" may be helpful in representing this type of change.

The first two phenomena - incomplete change and local rather than global simplification - were also noted by Kiparsky (1982a). They led him to argue that analogical change is a phenomenon rooted in language acquisition, in which generalisations are made on the basis of inadequate data. If this view is accepted, then we could also add that analogical change can reflect a particular *type* of generalisation - the schema - which Bybee and Slobin (1982) claim is associated especially with child language, and which is not readily analysable in terms of rule simplification.

Notes

1. The occasional movement of strong verbs into minor weak types of formation (as seen, for example, in some class V strong verbs in Westphalian dialects) does not provide counterexamples to this claim; minor weak verb formations both contain root vowel alternations and have different preterite endings from the major type of weak verbs.

2. The first generalisation also applies to the extension of A throughout the present tense, replacing A˜ (though not to partial levelling between A and A˜). In dialects where strong and weak verbs have different endings in the A˜ forms:

	strong	weak
2 sg	-st	-est
3 sg	-t	-et

the extension of the A alternant into the A˜ forms is also accompanied by the adoption of the weak endings:

2 sg	A˜ + -st	>>	A + -est
3 sg	A˜ + -t	>>	A + -et

At first sight, it appears that the second generalisation does not always hold true for this kind of change. In some Eastphalian dialects, 3 sg strong verb forms such as knipet (KNI:P), from dialect 23, are found, with a shortened root vowel, but with the unstressed vowel -e- in the ending, as in weak verbs. However, it turns out that this development is not an analogical introduction of the weak verb ending, but is rather due to a phonological change; an epenthetic vowel is inserted in clusters of voiceless obstruents:

-pt > -pet

3. Equally, in dialects which have lost the final -e of the 1st singular, and in which the root-final consonant of this form has undergone word-final devoicing, the 1st singular form itself could not serve as a base; there would have to be an abstract base, with the root-final consonant of the infinitive (which is not prone to word-final devoicing) but without the infinitive ending.

4. The present tense can also adopt the major formation independently of the rest of the paradigm; as we mentioned above, all cases of (complete) levelling between A and A˜ can be analysed in these terms.

5. The exceptions are phonologically conditioned: verbs with a root-final liquid or nasal do not have -e- in the 2nd and 3rd singular and the plural present, nor in the past participle; for these verbs, the structure suggested in diagram (ii) is more doubtful.

6. Of course, there are several dialects with this merger where no levelling at all has taken place between B and C in class I. But the whole of this discussion is concerned with what happens *if* change takes place, rather than whether change will in fact occur. Cf. the comments in Kuryłowicz 1949).

7. It could, of course, be argued that classes VI and VII, with (at least originally) no distinction between B and C, provide an abstract model in all dialects for the elimination of the distinction between the B and C alternants in other classes. Note, however, that no common "hinge" element would then be involved, so that the remodelling could not be analysed as proportional.

8. Indeed, the three class VII verbs themselves do not all agree in their other alternants: GANG has idiosyncratic present tense and past participle forms, deriving historically from a different root, GA:/GAI.

9. They also suggest that schemas may be particularly important in child language.

10. Two points should be made here. Firstly, this is a simplified account, as it does not take into account the effects of automatic phonological rules; we would probably not wish to count series which differed purely as a result of such rules as distinct. Secondly, we must draw a distinction in principle between the strong verb series defined thus and the traditional system of classes proposed by Grimm. Because of the way in which the latter were set up, they do in fact correspond quite closely with our definition of a series; however, we would, for example, have to recognise several series within the traditional class VII.

11. Of course, some changes may be analysable as both intra- and interparadigmatic; see the discussion above of the interaction between classes I and VII.

12. Note that the number of series remains constant:

1)	A1	B1	D1	=	A1	B1	D1
2)	A2	B2	D2	>>	A2	B1	D2

13. Of course, we are only talking about the prediction of alternants within the strong verb system, given the fact that a verb is strong. It cannot be predicted from the A alternant whether a given verb is strong or not.

14. We have only discussed the relationship between the present and the preterite here. Of, course, the predictability of D given B is also destroyed by the change. However, the markedness argument can be applied here too. There are grounds for regarding the perfect tense, which is formed from an auxiliary plus the past participle, as less marked than the preterite (though more marked than the present). For example, many of the dialect grammars comment on the extreme infrequency of the preterite.

15. This type of analysis might also account for the appearance in some dialects of a long vowel as the B alternant of class IV/V(1), instead of

expected *a. There is a problem, however, in that even after the change it is not true that all B forms in the system have a long vowel: class III retains a short B alternant.

16. Class IV/V(1) also has an umlauted C alternant in these dialects, but it is not a front rounded vowel.

17. Note that it is not the case that all C alternants are front rounded vowels; classes I, IV/V(1) and VII would be exceptions to this statement. However, it is true to say that C alternants with the feature [+round] are also [-back].

18. Note, however, that I can find no examples of "partial" (as distinct from incomplete) proportional analogy.

19. The total number of series remains unchanged:

1)	A1	B1	D1	=	A1	B1	D1
2)	A2	B2	D1	>>	A2	B1	D1

20. Note that the system before the change is different from the one which we used to illustrate non-proportional change, in that series 1) and 2) share the same D alternant, D1.

21. The class II B alternant which is extended to class IV is not always the reflex of Pre-OS *au. In some dialects, there has been a previous change within class II, and it is this new B alternant which is extended to class IV. Where the new B alternant of class II is *o, from the past participle, then the extension of *o to the B forms of class IV can alternatively be analysed as an intraparadigmatic change:

	B	D		B	D
II	*o	*o	=	model	
IV	*a	*o	>>	*o	*o

22. The total number of series also remains unchanged:

1)=II	A1	B1	D1	=	A1	B1	D1
2)=IV	A2	B2	D1	>>	A2	B1	D1
3)=V	A2	B2	D2	=	A2	B2	D2

23. The C and C˜ forms are distributed in the same way as the B forms.

24. Note that a relationship of predictability between two forms need not imply that one is generated from, or via, the other.

25. Note that if the A alternants of the three classes had all been different, the simplification would have been more apparent, because the congruity between B and D would have been achieved without any loss of congruity elsewhere in the system:

	before change:			after change:		
1)	A1	B1	D1	A1	B1	D1
2)	A2	B2	D1	A2	B1	D1
3)	A3	B2	D2	A3	B2	D2

26. The rules in question could be either in the phonological component of the grammar or, as in Wurzel 1970, in a separate morphological component. Within the model of Lexical Phonology (Kiparsky 1982b), the argument would presumably be between derivation by rule within the lexicon and listing within the lexicon.

27. Or indeed to the members of more than one series, where the series have cerain alternants in common; an example of this would be the adoption of the class VI preterite alternant be class VII verbs such as SLA:P, HLAUP and HRO:P, which belong to various different series.

28. There are cases where interparadigmatic change apparently splits classes more evenly - e.g. the adoption of the B alternant of class V by some class I verbs in dialects 23 and 25. However, in this case, class I had already been divided by a phonological change in the past participle, and it is this division which determines whether an item undergoes the interparadigmatic change or not.

29. There are, of course, problems with such accounts. See, for example, Lass (1980) and Vincent (1978).

30. The feasibility of constructing an ad hoc rule system which would generate strong verb forms in our dialects has not been investigated in detail. However, it seems likely that such systems could be devised, and that the forms of most strong verbs could be generated, given their A alternant and information about the consonants in the root. Wurzel's prior division of strong verbs into three classes, marked in the lexicon, would probably be unnecessary in our dialects; verbs would simply have to be marked as strong in the lexicon.

31. We could say that "the forms expressing category X are remodelled on those expressing category Y". But this terminology might be misleading: we might be tempted to equate the remodelling of the X forms on the Y forms with the *derivation* of the X forms *from* the Y forms by productive (or, in our terminology, major) rules. Bybee and Brewer (1980) imply that intraparadigmatic change can indeed by analysed in thse terms. However, our data suggest that, while this kind of analysis may sometimes be possible (see the discussion of intraparadigmatic change and the major rule system in 8.1), this is by no means always the case. The X forms may adopt the alternant found in the Y forms without necessarily becoming derivable from these forms by major rules.

32. There are isolated instances of levelling between the present and the past participle of strong verbs.

33. Class I is split in dialect 30 (Rhoden), but in a fairly systematic way, depending on the root-final consonant.

Appendix: Index of verbs

The verbs are entered under a reconstructed Pre-OS root form; this is the form which is used to gloss examples in the main body of the thesis. The lay-out of entries is as follows:

Pre-OS root	Eng gloss	OS form	Dialect forms	Dialect forms
class number	Eng cognate	MLG form	"	"
(if strong)	Ger cognate	MDu form	"	"
		Du form	"	"

All the forms quoted (except the Pre-OS root) are in the infinitive, except where stated otherwise. Seven dialects have been chosen, representing all the major areas:

33 Soest (Westphalian)
22 Dingelstedt (Eastphalian)
77 Glückstadt (NLS)
11 Loppow (Eastern)
54 Antwerp (Flemish)
59 Waterland (Dutch)
45 Montzen (Rhineland)

The index is divided into two parts: strong verbs, and verbs belonging to minor weak conjugations in the modern dialects. The index of strong verbs was prepared with the help of Seebold's dictionary (1970). Verbs are listed only if they are strong in one or more of the seven dialects. If no form is given for a particular dialect, this simply means that the verb is not strong in the dialect in question. It is usually not possible to tell from the dialect grammars whether the verb has been lost completely, or has become weak.

Similarly, in the index of verbs belonging to minor weak conjugations, if no form is given for a particular dialect, this could mean either that the verb does not exist in the dialect conerned, or that it belongs to the major weak conjugation.

The scripts used in the dialect grammars have been normalised to some extent. A broad form of the IPA is used; for example, ɛ̲ is used only when it contrasts with e̲ within a particular dialect, as in dialect 59 (Waterland). In dialect 45 (Montzen), there is a pitch accent contrast; the dialect grammar (Welter 1933) describes this as "geschärft" (acute) versus "zweigipflig" (circumflex). We have marked just the former, using the sign / above the vowel.

The following abbreviations are used in the index:

So = Soest
Di = Dingelstedt
Gl = Glückstadt
Lo = Loppow
An = Antwerp
Wa = Waterland
Mo = Montzen

W = weak
Ma = major (weak)
Mi = minor (weak)
S = strong
Pr = preterite
Pa = past participle

A Strong verbs

BAK(K)	"bake"	OS ---	So bakn	An bake WPr
VI	bake	MLG backen		Wa bake WPr
	backen	MDu bak(k)en		
		Du bakken WPr		
BEOD	"order"	OS biodan	So baeen	An bi:je
II		MLG beden	Di ba:in	Wa bide
	bieten	MDu bieden	Gl be:dn	Mo bí:ne
		Du bieden	Lo bi:dn	
BEOG	"bend"	OS ---	So Pr beox	An boige
/BU:G		MLG bugen	Di Pr buox	Wa buige
II	biegen	MDu bughen	Gl Pr bo:x	
		(bieghen)	Lo Pr bo:x	
		Du buigen		
BERG	"cover"	OS ---	So fabe:aɣn	An ba:rege
III		MLG bergen	Gl ba:gn	Mo verbéreɣe
	bergen	MDu berghen	Lo farbarjn	
		Du bergen		
BIDDJ	"ask"	OS biddian	Gl bitn	Wa bede WPr
V	bid	MLG bidden	Lo bidn	
	bitten	MDu bidden		
		Du bidden		
BIND	"bind"	OS bindan	So binn	An biŋde
III	bind	MLG binden	Di binn	Wa bajnde
	binden	MDu binden	Gl binn	Mo bíŋe
		Du binden	Lo biŋŋ	
BI:T	"bite"	OS bi:tan	So buitn	An baite
I	bite	MLG biten	Di bi:tn	Wa bajte
	beissen	MDu biten	Gl bi:tn	Mo bi:te
		Du bijten	Lo bi:tn	
BLA:S	"blow"	OS ---	So blɔ:zn	An blɔ:ze WPr
VII		MLG blasen	Lo blɔ:zn	Wa ble:ize
	blasen	MDu blasen		Mo blɔ́:ze
		Du blazen		
BLI:K	"gleam"	OS bli:kan	So fabluikn	An blaike
I		MLG bliken		Wa blajke
	bleichen	MDu bliken		
		Du blijken		

BLINK	"glitter"	OS	---		An blinke
III	blink	MLG	---		Wa blenke
		MDu	---		Mo ble:nke
		Du	blinken		
BRA:D	"roast"	OS	---	So brɔ:n	An broie WPr
VII		MLG	braden		Wa bre:jde WPr
	braten	MDu	braden		
		Du	braden WPr		
BREK	"break"	OS	brekan	So breakn	An bre:ke
IV	break	MLG	breken	Di bre:ken	Wa bre:ke
	brechen	MDu	breken	Gl brɛ:kŋ	Mo breeke
		Du	breken	Lo brɛ:kŋ	
BREST	"burst"	OS	brestan	So beastn	An barste WPr
/BERST	burst	MLG	bersten	Di bastn̩	Wa barste WPr
III	bersten	MDu	bersten	Gl basn	
		Du	barsten WPr	Lo baršdn	
DERB	"take	OS	---	So fade:avn/bm	An beda:reve
III	pains"	MLG	vorderven	Di fordarebm̩	Wa bede:reve
	verderben	MDu	---	Gl foda:bm	Mo verdéreve
		Du	bederven	Lo fardarvn	
DRAG	"carry"	OS	dragen	So dreaɣn	An drɔ:ge
VI	draw	MLG	dragen	Di dra:n	Wa drɔ:ge
	tragen	MDu	draghen	Gl dre:gŋ	Mo drá:ɣe
		Du	dragen	Lo dra:en	
DREOG	"deceive"	OS	driogan	So (be)draeɣn	An (be)dri:ge
II		MLG	dregen	Di bedra:in	Wa bedrige
	trügen	MDu	bedrieghen	Gl (be)dre:gŋ	Mo bedrí:ɣe
		Du	bedriegen	Lo (be)dri:en	
DREOP	"drip"	OS	driopan	Wa druipe	
/DRU:P		MLG	drepen		
II		MDu	drupen		
		Du	druipen		
DREP	"strike"	OS	ofardrepan	So dreapm	An trefe <HG
IV/V		MLG	drepen	Di dre:pm̩	Wa trɛfe <HG
	treffen	MDu	drepen	Gl drɔ:pm?	Mo trefe <HG
		Du	treffen <HG	Lo trefn <HG	

DRI:B	"drive"	OS	dri:ban	So druibm	An draive
I	drive	MLG	driven	Di dri:bm̩	Wa drajve
	treiben	MDu	driven	Gl dri:bm̩	Mo drí:ve
		Du	drijven	Lo dri:vn	
DRINK	"drink"	OS	drinkan	So driŋkn	An driŋke
III	drink	MLG	drinken	Di driŋken	Wa dreŋke
	trinken	MDu	drinken	Gl driŋkŋ̩	Mo dre:ŋke
		Du	drinken	Lo driŋkŋ̩	
DWI:N	"disappear"	OS	---	An verdwaine	
I		MLG	---		
		MDu	dwinen		
		Du	verdwijnen		
ET	"eat"	OS	etan	So eatn	An e:te
V	eat	MLG	eten	Di e:tn̩	Wa e:jte
	essen	MDu	eten	Gl ɛ:tn	Mo eete
		Du	eten	Lo ɛ:tn	
FA:H	"catch"	OS	fa:han	So faŋn	An vaŋe
<FANH		MLG	vangen/van	Di feŋen	Wa faŋe
VII	fangen	MDu	vanghen/	Gl faŋŋ	Mo váŋe
			vaen	Lo faŋŋ/	
		Du	vangen	anfeŋŋ	
FALD	"fold"	OS	---		An va:we WPr
VII	fold W	MLG	volden WPr		Wa fawe WPr
	falten W	MDu	vouden		Mo vóue
		Du	vouwen WPr		
FALL	"fall"	OS	fallan	So faln	An vale
VII	fall	MLG	vallen	Di fal̩	Wa fale
	fallen	MDu	vallen	Gl faln	Mo vále
		Du	vallen	Lo faln	
FAR	"travel"	OS	faran	Lo fɔ:rn̩	An vɔ:re WPr
VI	fare	MLG	varen		Wa fo:re
	fahren	MDu	varen		Mo vá:re
		Du	varen		
FEHT	"fight"	OS	fehtan	Lo fectn	An vehte
V>>III	fight	MLG	vechten		Wa fɛxte
	fechten	MDu	vechten		
		Du	vechten		

FELH	"order"	OS	bifelhan	So bevealn	An befe:le
>FEL		MLG	bevelen	Di befe:l	Mo bevé:le
III>IV	befehlen	MDu	bevelen	Gl befɛ:ln	
		Du	bevelen	Lo befɛ:ln	
FINTH	"find"	OS	findan	So finn	An vinde
/FIND	find	MLG	vinden	Di finn	Wa fajnde
III	finden	MDu	vinden	Gl finn	Mo vínge
		Du	vinden	Lo fiŋŋ	
FLEHT	"plait"	OS	flehtan	So flectn	An vlehte
III		MLG	vlechten	Gl flexn WPa	Wa flɛxte
	flechten	MDu	vlechten	Lo flectn	
		Du	vlechten		
FLEOG	"fly"	OS	---	So flaeɣn	An vli:ge
II	fly	MLG	vlegen	Di fla:in	Wa flige
	fliegen	MDu	vlieghen	Gl fle:gŋ	Mo vlí:ɣe
		Du	vliegen	Lo fli:en	
FLEOT	"flow"	OS	fliotan	So flaetn	
II		MLG	vleten	Di fla:itn	
	fliessen	MDu	vlieten	Gl fle:tn	
		Du	vlieten	Lo fli:tn	
FLU:T	"whistle"	OS	---	An floite	
II		MLG	---		
		MDu	---		
		Du	vluiten		
FRAGO:	"ask"	OS	---	Di fra:n WPa	An vrɔ:ge WPa
W>>VI		MLG	---	Gl fra:gŋ WPa	Wa fre:jge
	fragen W	MDu	---		
		Du	vragen /W		
FREOS	"freeze"	OS	---	So fraezn	An vri:ze
II	freeze	MLG	---	Di fra:irn	Wa frize
	frieren	MDu	vrieren	Gl fre:an	Mo vrí:ze
		Du	vriezen	Lo fri:en	
FRET	"devour"	OS	fretan	So freatn	Wa fre:jte
<FRA-ET	fret	MLG	vreten	Di fre:tn	Mo vreete
V	fressen	MDu	vreten	Lo frɛ:tn	
		Du	vreten		
GA:	"go"	OS	ga:n	So xɔ:n	An go:n
	go	MLG	gan	Di ga:n	Wa xe:jn
	gehen	MDu	gaen	Gl gɔ:n	Mo ɣu:e
		Du	gaan	Lo gɔ:n	

GANG	"go"	OS	gangan	So Pr	ceŋk	An Pr	guŋ
VII		MLG Pr	genk	Di Pr	juŋk	Wa Pr	xeŋ/xoŋ
	Pr ging	MDu	ganghen	Gl Pr	guŋ	Mo Pr	ɣiŋ
	Pa gegangen	Du Pr	ging	Lo Pr	juŋk/jiŋk		
GEB	"give"	OS	geban/	So	ci:evn/bm	An	ge:ve
V	give		giban	Di	jiebm̩	Wa	xe:ve
	geben	MLG	geven	Gl	gɛ:bm̩	Mo	ɣé:ve
		MDu	gheven				
		Du	geven				
GELD	"pay"	OS	geldan	So	celn		
III	yield	MLG	gelden	Di	jill̩		
	gelten	MDu	ghelden	Gl	gell̩n		
		Du	gelden	Lo	jell̩n		
GEOT	"pour"	OS	giotan	So	xaetn	An	gi:te
II		MLG	geten	Di	ja:itn̩	Wa	xite
	giessen	MDu	ghieten	Gl	ge:tn	Mo	ɣiete
		Du	gieten	Lo	ji:tn		
(-)GET	"obtain"	OS	-getan	So	faceatn	An	verge:te Wpr
V	(for)get	MLG	vorgeten	Di	forjetn̩	Wa	verge:te
	vergessen	MDu	vergheten	Gl	føgɛ:tn	Mo	verɣeete
		Du	vergeten	Lo	farjɛ:tn		
-GINN	"begin"	OS	-ginnan	Di	bejinn̩	An	begine
III	begin	MLG	beginnen	Lo	bejinn	Wa	begene
	beginnen	MDu	beghinnen			Mo	beɣéne
		Du	beginnen				
GLI:D	"glide"	OS	gli:dan	So	xluien		
I	glide W	MLG	gliden	Di	gli:n		
	gleiten	MDu	gliden	Gl	gli:dn		
		Du	glijden	Lo	gli:dn		
GLIMM	"glow"	OS	---	So	xlemm		
III		MLG	glimmen	Lo	glimm		
	glimmen	MDu	glimmen				
		Du	glimmen				
GRAB	"dig"	OS	graben			An	grɔ:ve WPr
VI		MLG	graven			Wa	xro:ve
	graben	MDu	graven			Mo	ɣrá:ve
		Du	graven				

GRI:N	"whimper"	OS ---	So xruinn	Mo ɣríŋe
I		MLG grinen		
		MDu grinen		
		Du ---		
GRI:P	"grasp"	OS gri:pen	So xruipm	Mo beɣri:pe
I	grip W	MLG gripen	Di gri:pm̩	
	greifen	MDu gripen	Gl gri:pm̩	
		Du grijpen	Lo gri:pm	
GRI:S	"shudder"	OS ---		An graize
I		MLG ---		
		MDu grisen		
		Du afgrijzen		
HEFFJ	"lift"	OS hebbian	Gl ophɛ:bm WPr	Mo hé:ve
VI	heave	MLG heven	Lo hɛ:vn	
	heben	MDu heffen		
		Du heffen		
HA:H	"hang"	OS ha:han	So haŋn	An aŋe
<HANH	hang	MLG han/hangen	Di heŋen	Wa aŋe
VII	hangen	MDu haen/	Gl haŋŋ	Mo háŋe
		hanghen	Lo heŋŋ	
		Du hangen		
HAIT	"be called"	OS he:tan	Di hietn̩	Wa ite WPr
VII		MLG heten	Gl he:tn	Mo he:še
	heissen	MDu heten	Lo hi:tn	
		Du heten WPr		
HALD	"hold"	OS haldan	So holn	An a:we
VII	hold	MLG holden	Di huol̩	Wa awe
	halten	MDu houden	Gl ho:ln	Mo hóue
		Du houden	Lo holln	
HAUW	"hew"	OS hauhan		Mo hóue
VII	hew	MLG houwen /W		
	hauen	MDu houwen		
		Du houwen		
HELP	"help"	OS helpan	So helpm	An elpe
III	help	MLG helpen	Di hilepm̩	Mo helepe
	helfen	MDu helpen	Gl helpm	
		Du helpen	Lo helpm	

HLAD	"load"	OS	hladan		An loie WPr
VI		MLG	laden		Mo lá:ne
	laden	MDu	laden		
		Du	laden WPr		
HLAH	"laugh"	OS	---		An lahe WPr
VI	laugh W	MLG	lachen		Wa laxe WPr
	lachen W	MDu	---		
		Du	lachen		
HLAUP	"run"	OS	---	So leopm	An lɔ:pe
VII	leap W	MLG	lopen	Di luopm̥	Wa lo:wpe
	laufen	MDu	lopen	Gl lo:pm	Mo lo:pe
		Du	lopen	Lo lo:pm	
HRO:P	"call"	OS	hro:pan	So raopm	An ru:pe
VII		MLG	ropen	Di ra:upm̥	Wa ro:wpe
	rufen	MDu	roepen	Gl ro:pm	Mo rɔ́:pe
		Du	roepen	Lo ru:pm	
HWERB	"turn"	OS	hwerban	So ave:avn/bm	
III		MLG	werven	Di warebm̥	
	werben	MDu	werven	Gl eva:bm	
		Du	werven	Lo arvarvn	
JAGO:	"chase"	OS	---		An jɔ:ge
W>>VI		MLG	---		Wa jo:ge
	jagen	MDu	---		Mo já:ge
		Du	jagen		
KEOS	"choose"	OS	kiusan		An ki:ze
II	choose	MLG	kesen		Wa kize
	erkiesen	MDu	kiesen		
		Du	kiezen		
KERB	"carve"	OS	---		Wa ke:reve
III	carve	MLG	kerven		
		MDu	kerven		
		Du	kerven		
KI:K	"look"	OS	---	So kuikn	An kaike (rare)
I		MLG	kiken	Gl ki:kŋ	Wa kajke
		MDu	kiken	Lo kikŋ	Mo kike
		Du	kijken		

KI:N	"germinate"	OS	ki:nan	So kuinn	
I		MLG	---		
		MDu	---		
		Du	---		
KLEOB	"split"	OS	---	Di klu:bm̥	An kli:ve
/KLU:B	cleave	MLG	---		Wa kluive
II		MDu	clieven/ cluven		
		Du	kluiven		
KLIMM	"climb"	OS	---	So klemm	An klyme
<KLIMB	climb W	MLG	klimmen	Lo klimm	Wa kleme
III	klimmen	MDu	clemmen		Mo kléme
		Du	klimmen		
KLING	"sound"	OS	---	So kliŋn	An kliŋke
III		MLG	klingen	Di kliŋen	Wa kleŋke
	klingen	MDu	clinghen/ clinken	Gl kliŋŋ Lo kliŋŋ	
		Du	klinken		
KNI:P	"nip"	OS	---	So knuipm	An naipe
I		MLG	knipen	Di kni:pm̥	Wa knajpe
	kneifen	MDu	nipen	Gl kni:pm	Mo kni:pe
		Du	(k)nijpen	Lo kni:pm WPa	
KRI:G	"obtain"	OS	---	So kruiɣn	An kraige
I		MLG	krigen	Di kri:n	Wa krajge
		MDu	crighen	Gl kri:gŋ	Mo krí:e
		Du	krijgen	Lo kri:en WPa	
KRIMP	"contract"	OS	---	So krempm	An krympe
III		MLG	krimpen	Lo krimpm	Wa krempe
		MDu	crempen		
		Du	krimpen		
KRI:SK	"shriek"	OS	---		An kraise (rare)
I		MLG	---		Mo kri:ɣše
	kreischen	MDu	crijschen		
		Du	---		
KRU:P	"creep"	OS	---	So kriupm	An kroipe
/KREOP	creep W	MLG	krepen/ krupen	Di kru:pm̥ Gl kru:pm	Wa kruipe Mo kru:pe
II		MDu	kruipen	Lo kru:pm	
		Du	kruipen		

KUM	"come"	OS	kuman	So kuemm	An ko:me
IV	come	MLG	komen	Di kuoɱ	Wa ko:wme
	kommen	MDu	comen	Gl kɔ:mm	Mo kó:me
		Du	komen	Lo kɔ:mm	
KWELL	"spring"	OS	quellan	So kveln	
III		MLG	quellen	Di kwill	
		MDu	---	Gl kwiln	
		Du	---	Lo kveln	
LA:T	"let"	OS	la:tan	So lɔ:tn	An lɔ:te
VII	let	MLG	laten	Di la:tn̩	Wa le:jte
	lassen	MDu	laten	Gl lɔ:tn	Mo lɔ́:te
		Du	laten	Lo lɔ:tn	
LEOG	"tell lies"	OS	liogan	So laeɣn	An li:ge
II	lie W	MLG	legen	Di la:in	Wa lige
	lugen	MDu	liegen	Gl le:gŋ	Mo lɛ́:ɣe
		Du	liegen	Lo li:en	
LEOS	"lose"	OS	-liosan	So falaezn	An verli:re
II	lose	MLG	vorlesen	Di forla:irn̩	Wa ferlize
	verlieren	MDu	verliesen	Gl fœle:an	Mo verlɛ́:ze
		Du	verliezen	Lo farli:ɐrn	
LES	"gather"	OS	lesan	So leazn	An le:ze WPr
V	->"read"	MLG	lesen	Di le:zn̩	Wa le:se
		MDu	lesen	Gl lɛ:zn /W	Mo lé:ze
	lesen	Du	lezen	Lo lɛ:zn	
-LI:B	"stay"	OS	-li:ban	So bluibm	An blaive
I		MLG	bliven	Di bli:bm̩	Wa blajve
	bleiben	MDu	bliven	Gl bli:bm	Mo blí:ve
		Du	blijven	Lo bli:vn	
LIGGJ	"lie"	OS	liggian	So liɣn MiWPr	An lige
V	lie	MLG	liggen	Di lijen	Wa le:ge
	liegen	MDu	ligghen	Gl liŋŋ	Mo lɛ́:e
		Du	liggen	Lo liŋŋ	
-LI:K	"seem"	OS	---	So xluikn	An gelaike
I		MLG	---	Gl fœgli:kŋ	Wa lajke
	gleichen	MDu	---	Lo gli:kŋ	Mo ɣli:ke
		Du	lijken		

-LING	"succeed"	OS	---	So xeliŋn	
III		MLG	---	Gl geliŋŋ	
		MDu	---	Lo jeliŋŋ	
		Du	---		
LI:TH	"suffer"	OS	li:than/	So luien	An laie
I			li:dan	Di li:n	Wa la:je
	leiden	MLG	liden	Gl li:dn	Mo lí:e
		MDu	liden	Lo li:dn	
		Du	lijden		
MAKO:	"make"	OS	makon W	So ma:kn	
W>>VI/	make W	MLG	maken W	Lo mɔ:kŋ	
VII	machen W	MDu	maken W		
		Du	maken W		
MAL	"grind"	OS	---		An mɔ:le WPr
VI		MLG	malen		Wa mo:le
	mahlen WPr	MDu	malen		Mo má:le
		Du	malen WPr		
MELK	"milk"	OS	---	So melkn	An meleke
III	milk	MLG	---	Gl melkŋ WPr	Wa mɛleke
	melken	MDu	melken	Lo melkŋ	Mo meleke
		Du	melken		
MET	"measure"	OS	metan	So meatn	An me:te
V	mete	MLG	meten	Di me:tn̩	Mo meete
	messen	MDu	meten	Gl mɛ:tn	
		Du	meten	Lo mɛ:tn	
MI:G	"micturate"	OS	---	So muiɣn	
I		MLG	---	Di mi:n	
		MDu	---	Gl mi:gŋ	
		Du	---		
MI:TH	"avoid"	OS	mi:than/	So muien	An maie
I			mi:dan	Lo mi:dn	
	meiden	MLG	miden		
		MDu	miden		
		Du	mijden		
NEM	"take"	OS	niman/	So neamm	An ne:me
V			neman	Di niem̩	Wa ne:me
	nehmen	MLG	nemen	Gl nɛ:mm	Mo né:me
		MDu	nemen	Lo nɛ:mm	
		Du	nemen		

NEOT	"enjoy"	OS	niotan	So xenaetn	
II		MLG	neten	Di jena:itn	
	geniessen	MDu	ghenieten	Gl gene:tn	
		Du	genieten	Lo jeni:tn	
-NES	"survive"	OS	-nesan		An gene:ze WPr
V		MLG	(ge)nesen		Wa (xe)ne:se
	genesen	MDu	ghenesen		
		Du	genezen		
PI:P	"whistle"	OS	---	So puipm	Mo pi:pe
I	pipe	MLG	pipen		
	pfeifen	MDu	pipen		
		Du	---		
PRI:S	"praise"	OS	---	So ampruizn	Wa prajze
I		MLG	---	Lo ampri:zn WPa	Mo prí:ze
	preisen	MDu	---		
		Du	prijzen		
RA:D	"advise"	OS	ra:dan	So ro:en	Wa re:jde WPr
VII		MLG	raden	Di jera:n	Mo ró:ne
	raten	MDu	raden		
		Du	raden		
REOK	"smoke"	OS	---	So riukn	An ri:ke
/RU:K	reek W	MLG	ruken	Di ru:ken	Wa ruike
II	rauchen W	MDu	ruken/ rieken	Gl ry:kŋ	Mo ry:ke
		Du	ruiken		
RI:D	"ride"	OS	---	So ruien	An raie
I	ride	MLG	riden	Di ri:n	Wa ra:je
	reiten	MDu	riden	Gl ri:dn	Mo rí:e
		Du	rijden	Lo ri:dn	
RI:H	"thread"	OS	---		An raige
I		MLG	ri(g)en		Wa rajge
	reihen	MDu	rien		
		Du	rijgen		
RINN	"run"	OS	rinnan	So rinn	
III	run	MLG	rinnen		
	rinnen	MDu	rinnen		
		Du	---		

RI:S	"rise/set"	OS	ri:san	So ruizn	An raize
I	rise	MLG	risen		
		MDu	rizen		
		Du	rijzen		
RI:T	"tear"	OS	---	Di ri:tn	Mo ri:te
I		MLG	toriten	Gl ri:tn	
	reissen	MDu	riten	Lo ri:tn	
		Du	rijten		
SALT	"season"	OS	---		An zaute WPr
VII	salt	MLG	solten WPr		Wa sawte WPr
	salzen	MDu	souten		Mo zo:te
		Du	zouten WPr		
SEHW	"see"	OS	sehan	So saeen	An zi:n
V	see	MLG	sien	Di za:in	Wa sin
	sehen	MDu	zien	Gl se:n	Mo zi:e
		Du	zien	Lo zi:n	
SINGW	"sing"	OS	singan	So sign	An zige
III	sing	MLG	singen	Di zigen	Mo zíge
	singen	MDu	zinghen	Gl zigg	
		Du	zingen	Lo zigg	
SINKW	"sink"	OS	sinkan	So sigkn	An zigke
III	sink	MLG	---	Di zigken	Mo ze:gke
	sinken	MDu	sinken	Lo zigkg	
		Du	zinken		
SINN	"go;ponder"	OS	---	So besinn	An ver/besine
III		MLG	---	Di bezinn	Mo verzéne
	sinnen	MDu	---	Gl zinn	
		Du	verzinnen	Lo zinn	
SITTJ	"sit"	OS	sittian	So sitn	An zite
V	sit	MLG	sitten	Di zitn	Wa sete
	sitzen	MDu	sitten	Gl zitn	Mo zite
		Du	zitten	Lo zitn	
SKAID	"part"	OS	ske:dan	Lo še:dn	
/SKAITH		MLG	scheden		
VII	scheiden	MDu	sceden		
		Du	scheiden WPr		

-SKEH	"happen"	OS	---	Di šaːin	Mo ɣešćːe
V		MLG	(ge)schen	Gl geše:n	
	geschehen	MDu	---	Lo ješiːn	
		Du	---		
SKELD	"chide"	OS	---	Di šillˌ	An šile ?
III		MLG	schelden	Gl šeln	
	schelten	MDu	scelden		
		Du	schelden		
SKENKJ	"pour"	OS	---		An šeŋke
W>>III		MLG	---		
	schenken W	MDu	---		
		Du	schenken		
SKEOT	"shoot"	OS	skietan	So sxaetn	An šiːte
II	shoot	MLG	scheten	Di šaːitn	Wa sxite
	schiessen	MDu	scieten	Gl šeːtn	Mo šiete
		Du	schieten	Lo šiːtn	
SKER	"shear"	OS	skeran	So sceːan	An šeːre
IV	shear	MLG	skeren	Gl šɛːan	
	scheren	MDu	sceren	Lo šɛːrn	
		Du	scheren		
SKIːN	"shine"	OS	skiːnan	So sxuinn	An šaine
I	shine	MLG	schinen		Wa sxajne
	scheinen	MDu	scinen		Mo šíŋe
		Du	schijnen		
SKIND	"flay"	OS	---	So scinn	
III		MLG	---	Di šinn	
	schinden	MDu	---	Lo šiŋŋ	
		Du	---		
SKIːT	"defecate"	OS	---	So sxuitn	An šaite
I	shit	MLG	schiten	Di šiːtn	Wa sxajte
	scheissen	MDu	sciten	Gl šiːtn	
		Du	---	Lo šiːtn	
SKREKK	"jump"	OS	---	Gl fœšrekŋ	Wa sxreke
III		MLG	---	Lo faršrekŋ	
	schrecken	MDu	---		
		Du	schrikken		

SKRI:B	"write"	OS	scri:ban	So sxruibm	An šraive
I	shrive	MLG	schriven	Di šri:bm̩	Mo šrí:ve
	schreiben	MDu	scriven	Gl šri:bm̩	
		Du	schrijven	Lo šri:vn	
SKRIND	"smart"	OS	---	So sxrinn	
III		MLG	---	Lo šriŋŋ	
		MDu	---		
		Du	---		
SKRI:TH	"stride"	OS	skri:dan	So sxruien	
/SKRI:D		MLG	---		
I	schreiten	MDu	schrijden		
		Du	schrijden		
SKRU:B	"screw"	OS	---	So sxriuvn/bm	
II	screw	MLG	---	Di šru:bm̩	
	schrauben	MDu	scruven	Gl šru:bm̩	
		Du	---		
SKU:B	"push"	OS	---	So scuivn/bm	An šoive
/SKEOB	shove	MLG	schuven	Di šu:bm̩	Wa sxuive
II	schieben	MDu	schuiven	Gl šu:bm̩	
		Du	schuiven	Lo šu:vn	
SKU:L	"hide"	OS	---		Wa fersxuile
II		MLG	---		
		MDu	sculen		
		Du	verschuilen		
SLAH	"strike"	OS	slahan	So slɔ:n	An slɔ:ge
VI	slay	MLG	slan	Di sla:n	Wa sle:jn
	schlagen	MDu	slaan	Gl slɔ:gŋ	Mo šlu:e
		Du	slaan	Lo šlɔ:n	
SLA:P	"sleep"	OS	sla:pan	So slɔ:pm	An slɔ:pe
VII	sleep	MLG	slapen	Di sla:pm̩	Wa sle:jpe
	schlafen	MDu	slapen	Gl slɔ:pm̩	
		Du	slapen	Lo šlɔ:pm	
SLI:K	"creep"	OS	---	So sluikn	
I		MLG	sliken	Gl sli:kŋ	
	schleichen	MDu	---	Lo šli:kŋ	
		Du	---		

SLINGW	"glide"	OS	---	So slinŋ	
III		MLG	slingen	Di sliŋen	
	schlingen	MDu	---	Gl sliŋŋ	
		Du	---	Lo šliŋŋ	
SLINK	"creep"	OS	---		Wa sleŋke
III	slink	MLG	slinken		
		MDu	---		
		Du	slinken		
SLI:P	"whet"	OS	---	So sluipm	An slaipe
I		MLG	---	Gl sli:pm	Wa slajpe
	schleifen	MDu	slipen		Mo šli:pe
		Du	slijpen		
SLI:T	"tear"	OS	sli:tan	So sluitn	An slaite
I	slit W	MLG	sliten	Gl sli:tn	Wa slajte
	schleissen	MDu	sliten	Lo šli:tn	
		Du	slijten		
SLU:K	"gulp"	OS	---	So sliukn	
II		MLG	sluken	Di slu:ken	
	schlucken	MDu	---	Gl slu:kŋ	
		Du	sluiken		
SLU:P	"creep"	OS	---		An sloipe (rare)
II		MLG	slupen		
		MDu	slupen		
		Du	sluipen		
SLU:T	"shut"	OS	---	So sliutn	An sloite
II		MLG	sluten	Di slu:tn	Wa sluite
	schliessen	MDu	sluten	Gl slu:tn	
		Du	sluiten	Lo šli:tn	
SMELT	"melt"	OS	---	So smeltn	An smilte
III	smelt	MLG	smelten	Di smiltn	Wa smɛlte
	schmelzen	MDu	smelten	Lo šmeltn	
		Du	smelten		
SMI:T	"throw"	OS	---	So smuitn	An smaite
I		MLG	smiten	Di smi:tn	
	schmeissen	MDu	smiten	Gl smi:tn	
		Du	smijten	Lo šmi:tn	

SNI:TH	"cut"	OS	snithen	So snuien	An snaie
I		MLG	sniden	Di sni:n	Wa sna:je
	schneiden	MDu	sniden	Gl sni:dn	Mo šní:e
		Du	snijden	Lo šni:dn	
SNU:B	"snort"	OS	---	So sniuvn/bm	An snoive
II		MLG	---	Di snu:bm̩	Wa snuive
	schnauben	MDu	---	Gl snu:bm	
		Du	snuiven		
SNU:T	"blow nose"	OS	---		Wa snuite
II		MLG	---		Mo šny:te
		MDu	---		
		Du	snuiten		
SPANN	"stretch"	OS	---		An spane WPr
VII	span	MLG	spannen		Wa spane WPr
	spannen	MDu	spannen		Mo špáne
		Du	spannen WPr		
SPINN	"spin"	OS	---	So spinn	An spine
III	spin	MLG	spinnen	Di spinn̩	Wa spene
	spinnen	MDu	spinnen	Gl spinn	
		Du	spinnen	Lo šbinn	
SPLI:T	"split"	OS	---	So spluitn	Wa splajte
I	split	MLG	spliten	Gl spli:tn	Mo špli:te
	spleissen	MDu	spliten		
		Du	splijten		
SPREK	"speak"	OS	spreken	So spreakn	An spre:ke
IV	speak	MLG	spreken	Di spre:ken	Wa spre:ke
	sprechen	MDu	spreken	Gl sprε:kŋ	Mo špreeke
		Du	spreken	Lo šbrε:kŋ	
SPRING	"jump up"	OS	---	So sprigŋ	An sprige
III	spring	MLG	springen	Di sprigen	Wa sprege
	springen	MDu	springen	Gl sprigg	Mo šprí̯ge
		Du	springen		
SPRU:T	"sprout"	OS	u:tspru:tan	So spruitn	
/SPREOT	sprout W	MLG	spruten	Lo šbri:tn	
II	spriessen	MDu	spruten		
		Du	spruiten		

SPU:T	"spout"	OS	---		An spoite
II	spout	MLG	---		
		MDu	---		
		Du	spuiten		
STA:	"stand"	OS	sta:n	So stɔ:n	An stɔ:n
		MLG	stan	Di sta:n	Wa ste:jn
	stehen	MDu	staen	Gl stɔ:n	Mo šťu:e
		Du	staan	Lo šdɔ:n	
STA(N)D	"stand"	OS	standan	So Pr stont	An Pr stuŋ
VI	stand	MLG	Pr stond	Di Pr stunt	Wa Pr stount/steŋ
	Pr stand	MDu	standen	Gl Pr stun	Mo Pr šťúŋ
		Du	Pr stond	Lo Pr šdunt	
STAUT	"push"	OS	sto:tan	Lo šdo:tn	An stɷ:te
VII		MLG	stoten		Wa sto:wte
	stossen	MDu	stoten		Mo šťúete
		Du	stoten		
STEK	"sting"	OS	stekan	So steakn	An ste:ke
V		MLG	steken	Di ste:ken	Wa ste:ke
	stechen	MDu	steken	Gl stɛ:kŋ	Mo šteeke
		Du	steken	Lo šdɛ:kŋ	
STEL	"steal"	OS	stelan	So stealn	An ste:le
IV	steal	MLG	stelen	Di ste:l̩	Wa ste:le WPr
	stehlen	MDu	stelen	Gl stɛ:ln	Mo šté:le
		Du	stelen	Lo šdɐ:ln	
STERB	"die"	OS	sterban	So ste:avn/bm̩	An sta:reve
III	starve	MLG	sterven	Di starebm̩	Wa ste:reve
	sterben	MDu	sterven	Gl sta:bm̩	Mo šťéreve
		Du	sterven	Lo šdarvn	
STI:G	"climb"	OS	sti:gan	So stuiɣn	
I		MLG	stigen	Di sti:n	
	steigen	MDu	stighen	Gl sti:gŋ	
		Du	stijgen	Lo šdi:en	
STINKW	"stink"	OS	---	So stiŋkn	An stiŋke
III	stink	MLG	stinken	Di stiŋken	Wa steŋke
	stinken	MDu	stinken	Gl stiŋkŋ	
		Du	stinken	Lo šdiŋkŋ	

STRI:D	"stride"	OS	---	So struien	An straie
I	stride	MLG	striden	Di stri:n	Wa stra:je
	streiten	MDu	striden	Gl stri:dn	Mo ʃtrí:e
		Du	strijden	Lo ʃdri:dn	
STRI:K	"strike"	OS	---	So struikn	An straike
I	strike	MLG	striken	Gl stri:kŋ	Wa straike
	streichen	MDu	striken	Lo ʃdri:kŋ	Mo ʃtri:ke
		Du	strijken		
STU:B	"scatter"	OS	---	So stiubm	An stoive
/STEOB		MLG	stuven	Gl sty:bm	Wa stuive
II	stieben	MDu	stuven		
		Du	stuiven		
SU:G	"suck"	OS	su:gan	So siuɣn	An suige
II		MLG	sugen	Di zu:n	Wa suige
	saugen	MDu	sughen	Gl zu:gŋ	
		Du	zuigen	Lo zu:en/zu:n	
SU:P	"drink"	OS	---	So siupm	An zoipe
II	sup W	MLG	supen	Di zu:pm̩	Wa suipe
	saufen	MDu	supen	Gl zu:pm	Mo zu:pe
		Du	zuipen	Lo zu:pm	
SWELL	"swell"	OS	swellan	So sveln	Wa swɛle
III	swell	MLG	swellen	Di swil̩l	
	schwellen	MDu	swellen	Gl swiln	
		Du	zwellen	Lo ʃweln	
SWER	"fester"	OS	---	So sve:an	An zwe:re
IV		MLG	---	Lo ʃvɛ:r̩n	
		MDu	sweren		
		Du	zweren		
SWERJ	"swear"	OS	swerian	Di swe:r̩n	
VI	swear	MLG	sweren	Gl swø:an WPr	
	schwören	MDu	sweren	Lo ʃve:r̩n	
		Du	zweren		
SWERB	"rub"	OS	---		An zwa:reve
III	swerve	MLG	---		Wa swe:reve
		MDu	swerven		
		Du	zwerven		

SWI:G	"be silent"	OS	---	So svuiɣn	An zwaige
I		MLG	swigen	Di swi:n	Wa swajge
	schweigen	MDu	swighen	Gl swi:gŋ	Mo žvíɣe
		Du	zwijgen	Lo ši:en	
SWI:K	"evade"	OS	---		An bezwaike
I		MLG	swiken		
		MDu	beswiken		
		Du	bezwijken		
SWIMM	"swim"	OS	---	So svemm	An zweme
III	swim	MLG	swummen	Di swimm	Mo žwéme
	schwimmen	MDu	swemmen	Lo švemm	
		Du	zwemmen		
SWIND	"disappear"	OS	-swindan	So fasvinn	
III		MLG	---	Di swinn	
	schwinden	MDu	---	Gl føswinn	
		Du	---	Lo švinn	
SWINGW	"swing"	OS	---	So sviŋn	
III	swing	MLG	swingen	Gl swiŋŋ	
	schwingen	MDu	swinghen	Lo šviŋŋ	
		Du	---		
TEOH	"pull"	OS	tiohan	Gl te:n	
II		MLG	ten		
	ziehen	MDu	---		
		Du	---		
TRED	"tread"	OS	---	So tre:an	Mo tré:ne
V	tread	MLG	treden	Di tre:n	
	treten	MDu	treden	Gl trɛ:dn	
		Du	treden	Lo trɛ:dn	
TREK(K)	"pull"	OS	---	So trekn	An treke
III		MLG	tre(c)ken	Gl trekŋ	Wa trɛke
		MDu	tre(c)ken	Lo trekŋ	Mo treke
THERSK	"thresh"	OS	---	So deaskn	
/THRESK	thresh W	MLG	derschen		
III	dreschen	MDu	derschen		
		Du	---		
THING	"hire"	OS	---	So iutbediŋn	Wa ofdeŋe
III		MLG	---	Gl diŋŋ	
	dingen	MDu	---	Lo diŋŋ	
		Du	dingen		

-THREOT	"tire"	OS	---	So	fadraetn	
II		MLG	---	Di	fordra:itn̩	
	verdriessen	MDu	verdrieten	Gl	fødre:tn	
		Du	verdrijten	Lo	fardri:tn	
THRING	"press"	OS	thringan	So	driŋn	An driŋe
III		MLG	dringen	Di	driŋen	Wa dreŋe
	dringen	MDu	dringen	Gl	driŋŋ	
		Du	dringen	Lo	driŋŋ	
THWING	"force"	OS	thwingan	So	tviŋn	An dwiŋe
III		MLG	dwingen	Di	twiŋen	Wa dweŋe
	zwingen	MDu	dwingen	Gl	dwiŋŋ	Mo dwiŋe
		Du	dwingen			
WAHS	"grow"	OS	wahsan	So	vasn	Mo wa:se
VI	wax W	MLG	vassen	Di	wasn̩	
	wachsen	MDu	wassen	Gl	vasn	
		Du	---	Lo	vasn	
WASK	"wash"	OS	---	So	vaskn	An wase WPr
VI	wash W	MLG	waschen	Di	waʃen	Wa wɛske WPr
	waschen	MDu	wasschen	Gl	vaʃn	Mo weiše
		Du	wassen			
WEB	"weave"	OS	weban			An we:ve WPr
V	weave	MLG	weven			
	weben	MDu	weven			
		Du	weven WPr			
WEG	"move;	OS	wegan	So	veaɣn	An we:ge
V	weigh"	MLG	wegen	Di	we:n	Wa bewe:ge
	weigh	MDu	weghen	Gl	vɛ:gŋ	
	bewegen	Du	wegen	Lo	bevɛ:en	
WERP	"throw"	OS	werpan			An wa:rpe
III		MLG	werpen			Mo we:repe
	werfen	MDu	werpen			
		Du	werpen			
WERTH	"become"	OS	werden	So	ve:rn	An wøre
III		MLG	werden	Di	wiern̩	Wa wore
	werden	MDu	werden	Gl	va:n	
		Du	worden	Lo	varn	

WI:K	"yield"	OS	---	So vuikn	
I		MLG	wiken	Lo vi:kŋ	
	weichen	MDu	wiken		
		Du	wijken		
WIND	"wind"	OS	winden	So vinn	An wiŋde
III	wind	MLG	winden	Di winn	Wa opwajnde
	winden	MDu	winden	Gl føvinn	
		Du	winden		
WINN	"win"	OS	winnan	So xevinn	An wine
III	win	MLG	winnen	Di jewinn	Wa wine
	gewinnen	MDu	winnen	Gl gevinn	Mo ɣewéne
		Du	winnen	Lo gevinn	
WI:S	"show"	OS	---	So vuizn	An waize
I		MLG	---	Lo vi:zn	Wa wajze
	weisen	MDu	---		Mo wí:ze
		Du	verwijzen		
WI:T	"punish"	OS	wi:tan		Wa ferwajte
I		MLG	witen		
		MDu	witen		
		Du	verwijten		
WREK	"pursue"	OS	wrekan		An vre:ke WPr
IV	wreak W	MLG	wreken		Wa fre:ke WPr
		MDu	wreken		
		Du	wreken		
WRI:B	"rub"	OS	---	So fruibm	An vraive
I		MLG	---	Di ri:bm	Wa frajve
	reiben	MDu	wriven	Gl ri:bm	Mo vrí:ve
		Du	wrijven	Lo ri:vn	
WRING	"wring"	OS	---	So friŋn	An vriŋe
III	wring	MLG	wringen	Di friŋen	Wa freŋe
	wringen	MDu	wringhen	Gl vriŋŋ	Mo vríŋe
		Du	wringen	Lo vriŋŋ	

Strong verbs by class

I BI:T, BLI:K, DRI:B, DWI:N, GLI:D, GRI:N, GRI:P, GRI:S, KI:K, KI:N, KNI:P, KRI:G, KRI:SK, -LI:B, -LI:K, LI:TH, MI:G, MI:TH, PI:P, PRI:S, RI:D, RI:H, RI:S, RI:T, SKI:N, SKI:T, SKRI:B, SKRI:TH, SLI:K, SLI:P, SLI:T, SMI:T, SNI:TH, SPLI:T, STI:G, STRI:D, STRI:K, SWI:G, SWI:K, WI:K, WI:S, WI:T, WRI:B

II(a) BEOD, BEOG, DREOG, DREOP, FLEOG, FLEOT, FREOS, GEOT, KEOS, KLEOB, KREOP, LEOG, LEOS, NEOT, REOK, SKEOT, TEOH, -THREOT

II(b) FLU:T, KRU:P, SKRU:B, SKU:B, SKU:L, SLU:K, SLU:P, SLU:T, SNU:B, SNU:T, SPRU:T, SPU:T, STU:B, SU:G, SU:P

III(a) BIND, BLINK, DRINK, FINTH/FIND, -GINN, GLIMM, KLIMM, KLING, KRIMP, LING, RINN, SINGW, SINKW, SINN, SKIND, SKRIND, SLINGW, SLINK, SPINN, SPRING, STINKW, SWIMM, SWIND, SWINGW, THING, THRING, THWING, WIND, WINN, WRING

III(b) BERG, BREST/BERST, DERB, FEHT, FLEHT, GELD, HELP, HWERB, KERB, KWELL, MELK, SKELD, SKREKK, SMELT, STERB, SWELL, SWERB, TREK(K), THERSK/THRESK, WERP, WERTH

IV BREK, DREP, FELH > FEL, NEM, SKER, SPREK, STEL, SWER

V BIDDJ, ET, FRET, GEB, -GET, LES, LIGGJ, MET, -NES, SEHW, SITTJ, SKEH, STEK, TRED, WEB, WEG

VI BAK(K), DRAG, FAR, GRAB, HEFFJ, HLAD, HLAH, MAL, SLAH, STA(N)D, SWERJ, WAHS, WASK

VII(a) FA:H < FANH, FALD, FALL, GANG, HA:H < HANH, HALD, SALT, SPANN

VII(b) HAIT, SKAID/SKAITH

VII(c) BLA:S, BRA:D, LA:T, RA:D, SLA:P

VII(d) HAUW, HLAUP, STAUT

VII(e) HRO:P

B Verbs belonging to minor weak conjugations in the modern dialects

ARBAIDJ	"work"	OS	---	So a:boeən	
		MLG	arbeden		
	arbeiten	MDu	arbeiden		
		Du	arbeiden Ma		
BA:TJ	"help"	OS	---	So ba:tn	
		MLG	baten		
		MDu	baten		
		Du	baten Ma		
BAUGJ	"bend"	OS	bo:gian	So boeɣn	
		MLG	bögen		
	beugen	MDu	boghen		
		Du	---		
BLO:DJ	"bleed"	OS	---	So blaoən	
	bleed	MLG	blöden	Gl blø:dn	
	bluten	MDu	bloeden		
		Du	bloeden Ma		
BORJ	"lift"	OS	---	So bø:an	
		MLG	bören		
		MDu	boren		
		Du	boren Ma		
BO:TJ	"light;	OS	---	So ambaetn	
	improve"	MLG	böten	Di bo:ytn	
	bussen	MDu	boeten	Gl bøtn	
		Du	boeten Ma		
BRAIDJ	"spread"	OS	---	So braeən	
		MLG	---		
	breiten	MDu	---		
		Du	---		
BRENNJ	"burn"	OS	brennian	So brenn	
	burn	MLG	bernen		
	brennen	MDu	bernen		
		Du	---		
BRING/	"bring"	OS	bringan/	So bregn	An bregə
BRENGJ	bring		brengian	Di brigen	Wa bregə
	bringen	MLG	bringen	Gl brigg	Mo bríge
		MDu	brenghen	Lo bregg	

DAILJ	"share"	OS	de:lian	So doeln	
	deal	MLG	deilen		
	teilen	MDu	be(i)len		
		Du	delen Ma		
DAUPJ	"baptise"	OS	do:pian	So doepm	
		MLG	döpen	Di dyøpm̥	
	taufen	MDu	dopen	Gl dø:pm	
		Du	dopen Ma		
DRAUMJ	"dream"	OS	dro:mian	So droemm	Mo drǿ:me
	dream	MLG	drömen		
	träumen	MDu	dromen		
		Du	dromen Ma		
FO:DJ	"feed"	OS	fo:dian	So faeen	
	feed	MLG	föden		
		MDu	voeden		
		Du	voeden Ma		
FO:LJ	"feel"	OS	fo:lian	So faeln	Mo vÝ́:le
	feel	MLG	völen		
	fühlen	MDu	voelen		
		Du	voelen Ma		
FO:RJ	"lead"	OS	---		Mo vÝ́:re
		MLG	vören		
	führen	MDu	voeren		
		Du	voeren Ma		
FULLJ	"fill"	OS	fullian	So fyln	
	fill	MLG	füllen		
	füllen	MDu	vullen		
		Du	vullen Ma		
HABBE:	"have"	OS	hebbian	So hebm	An eme
>>HEBBJ	have	MLG	hebben	Di hebm̥	Wa e:w(e)
	haben	MDu	hebben	Gl hemm	Mo ha:
		Du	hebben	Lo hebm	
HAIT	"be called"	OS	he:tan	So haetn	
S>>W		MLG	heten S/W		
	heissen	MDu	heten S		
		Du	heten S/MaW		

HAURJ	"hear"	OS	ho:rian	So hø:an	Mo hýere
	hear	MLG	hören		
	hören	MDu	horen		
		Du	horen Ma		
HAUW	"hew"	OS	hauhan S	So hoɣn	
	hew	MLG	houwen S/W		
	hauen	MDu	houwen S		
		Du	houwen S		
HLU:DJ	"sound"	OS	---	So luien/ludn	
		MLG	lüden	Di ly:n	
	läuten	MDu	luden		
		Du	luiden Ma		
-HO:BJ	"need"	OS	---	So haevn/haebm	
	behove	MLG	behöven		
		MDu	(be)hoven		
		Du	hoeven Ma		
HO:DJ	"protect"	OS	ho:dian	So haeen	Mo hý:ne
	heed	MLG	höden		
	hüten	MDu	hoeden		
		Du	hoeden Ma		
HRO:RJ	"stir"	OS	hro:rian		Mo rý:re
		MLG	---		
	rühren	MDu	roeren		
		Du	roeren Ma		
HU:DJ	"hide"	OS	---	So buihuien	
	hide	MLG	---		
		MDu	huden		
		Du	---		
JAGO:	"chase"	OS	---	Di ja:n	
		MLG	jagen		
	jagen	MDu	jaghen		
		Du	jagen S/MaW		
KAUPJ	"buy"	OS	ko:pian	So keopm	An kɔ:pe
			/ko:pon	Di kyøpm̥	Wa ko:wpe
	kaufen	MLG	köpen	Gl ko:pm	Mo verko:pe
		MDu	copen	Lo ke:pm	
		Du	kopen		

KENNJ	"know"	OS	-kennian	So kenn	Mo kéne
	ken	MLG	(be)kennen		
	kennen	MDu	kennen		
		Du	kennen Ma		
KO:LJ/	"cool"	OS	ko:lon		Mo kʏ́:le
KO:LO:	cool	MLG	kȫlen		
	kühlen	MDu	coelen		
		Du	koelen Ma		
LAIDJ	"lead"	OS	le:dian	So laeen	
	lead	MLG	le(i)den		
	leiten	MDu	leiden		
		Du	leiden Ma		
LAIHND:	"lend"	OS	le:hnon	So loenn	
	lend	MLG	---		
	lehnen	MDu	lenen		
		Du	lenen Ma		
LAUBJ	"believe"	OS	gilo:vian	So (x)loevn/bm	Mo ɣlǿ:ve
	believe	MLG	löven		
	glauben	MDu	gheloven		
		Du	geloven Ma		
LAUSJ	"loose"	OS	lo:sian	So loezn	
	loose	MLG	lösen		
	losen	MDu	losen		
		Du	---		
LEGGJ	"lay"	OS	leggian	So leɣn	An lege
	lay	MLG	leggen	Di lejen	Wa le:ge SPr
	legen	MDu	le(g)ghen	Lo legg	Mo lé:ɣe
		Du	leggen Ma		
MAINJ	"mean"	OS	me:nian	So maenn	
	mean	MLG	menen		
	meinen	MDu	m(i)enen		
		Du	menen Ma		
ME:DJ	"hire"	OS	me:dian	So moeen	
		MLG	---		
	mieten	MDu	---		
		Du	---		

MO:J	"take pains"	OS	---	So bemaeen	Mo bemʏ́:ne
	mühen	MLG	moien		
		MDu	moeyen		
		Du	moeien Ma		
MO:TJ	"meet"	OS	mo:tian	Gl møtn/bemø:tn	
	meet	MLG	möten		
		MDu	moeten		
		Du	---		
PLUKKJ	"pluck"	OS	---		Mo pløke
	pluck	MLG	plucken		
	pflucken	MDu	plucken		
		Du	plukken		
-RAIDJ	"prepare"	OS	---	So beraeen	
		MLG	---		
	bereiten	MDu	---		
		Du	---		
RENNJ	"run"	OS	girennian	So renn	
		MLG	rennen		
	rennen	MDu	rennen		
		Du	rennen Ma		
SEGGJ	"say"	OS	seggian	So seɣn	An zege
	say	MLG	seggen	Di zejen	Wa se:ge
	sagen	MDu	segghen	Lo zegŋ	Mo zá:ɣe
		Du	zeggen		
SETTJ	"set"	OS	settian	So setn	Mo zete
	set	MLG	setten		
	setzen	MDu	setten		
		Du	zetten Ma		
SKAITH S>>W	"separate"	OS	ske:than S	So sxoeen	
		MLG	scheden S/W		
	scheiden	MDu	sceden S		
		Du	scheiden S/MaW		
SKELLJ	"shell, peel"	OS	---	So sceln	
		MLG	---		
	schälen	MDu	---		
		Du	---		

SKENDJ	"insult"	OS	---	So scenn	
		MLG	schenden		
	schänden	MDu	scenden		
		Du	schenden	Ma	
SKATHO:	"damage"	OS	skathon	So sxa:en	
	scathe	MLG	schaden		
	schaden	MDu	scaden		
		Du	schaden	Ma	
SKIUJ	"shun"	OS	---		Mo šʏ́:e
	shy	MLG	---		
	scheuen	MDu	---		
		Du	---		
SKUDDJ	"shake"	OS	skuddian	So scydn	Mo šǿde
		MLG	schüdden		
	schütten	MDu	scudden		
		Du	schudden	Ma	
SO:KJ	"seek"	OS	so:kian	So saekn	An zɷ:ke
	seek	MLG	söken	Di zo:yken	Wa so:wke
	suchen	MDu	soeken	Gl zø:kŋ	Mo zʏ́:ke
		Du	zoeken	Lo zi:kŋ	
SPO:LJ	"wash"	OS	---	So spaeln	Mo špʏ́:le
		MLG	spölen	Di styøtn̩	
	spülen	MDu	spoelen		
		Du	spoelen	Ma	
STELLJ	"stand,	OS	stellian	So steln	Mo štéle
	put"	MLG	stellen		
	stellen	MDu	stellen		
		Du	stellen	Ma	
STAUTJ	"push"	OS	---	So steotn	
		MLG	stöten	Gl stø:tn	
		MDu	---		
		Du	---		
SU:MJ	"delay"	OS	---	So soemm	
		MLG	---		
	säumen	MDu	versumen		
		Du	verzuimen	Ma	

SWAITJ	"sweat"	OS	---	So svoetn	
	sweat	MLG	sweten		
		MDu	sweten		
		Du	zweten Ma		
TELLJ	"count"	OS	tellian		Mo téle
	tell	MLG	tellen		
	zählen	MDu	tellen		
		Du	tellen Ma		
THENKJ	"think"	OS	thenkian	So deŋkn	An deŋke
	think	MLG	denken	Di deŋken	Wa dɛŋke
	denken		/dinken	Gl deŋkŋ	Mo de:ŋke
		MDu	denken	Lo deŋkŋ	
		Du	denken		
THEONO:	"serve"	OS	theonon	So daenn	
		MLG	denen		
	dienen	MDu	dienen		
		Du	dienen Ma		
THU:DJ	"show"	OS	---	So beduien	
		MLG	duden	Di bedy:n	
	deuten	MDu	duden		
		Du	duiden Ma		
THUNKJ	"seem"	OS	thunkian	So dyŋkn	
		MLG	dunken	Di dyŋken	
	dünken	MDu	dunken	Lo dyŋkŋ	
		Du	dunken		
WENDJ	"turn"	OS	wendian	So venn	
	wend	MLG	wenden		
	wenden	MDu	wenden		
		Du	wenden Ma		

Bibliography

A: Dialect grammars

Ausems, Th.W.A. (1953) *Klank- en vormleer van het dialect van Culemborg.* (Taalkundige Bijdragen van Noord en Zuid, 4.) Assen: Gorcum.

Bernhardt, J. (1892) Lautstand der Glückstädter Mundart. *Niederdeutsches Jahrbuch*, 18.

Bernhardt, J. (1894) Die Glückstädter Mundart. *Niederdeutsches Jahrbuch*, 20.

Bezoen, H.L. (1938) *Klank- en vormleer van het dialect der gemeente Enschede.* Leiden: Brill.

Block, R. (1910) Die Mundart vom Eilsdorf (bei Halberstadt). *Zeitschrift für deutsche Mundarten*, 1910.

Bock, K.N. (1933) *Niederdeutsch auf dänischem Substrat. Studien zur Dialektgeographie Südostschleswigs.* (Deutsche Dialektgeographie, 34.) Marburg: Elwert.

Borchert, H. (1955) *Dialektgeographie des südlichen Emslandes.* Unpub. thesis, Marburg.

Bredtmann, H. (1938) *Die Velberter Mundart. Ein kurzer Abriss der Laut- und Formenlehre nebst einem Wörterverzeichnis.* (Velberter Heimatbücher, 1.) Wuppertal-Elberfeld: Martini & Grüttefien.

Brujel, M. (1901) *Het dialect van Elten-Bergh.* Unpub. thesis, Utrecht.

Bunning, H. (1934/5) Studien zur Geschichte der Bremischen Mundart. *Niederdeutsches Jahrbuch*, 60/61.

Dahlberg, A.T. (1934-7) *Die Mundart von Dorste; Studien über die niederdeutschen Mundarten an der oberen Leine.* (Lunder Germanistische Forschungen, 2, 4.) Lund: Gleerup.

de Bont, A.P. (1962) *Dialekt van Kempenland I.* (Taalkundige Bijdragen van Noord en Zuid, 9.) Assen: van Gorcum.

de Vin, A. (1953) *Het dialect van Schouwen-Duiveland.* (Taalkundige Bijdragen van Noord en Zuid, 2A.) Assen: van Gorcum.

Feyer, U. (1939) *Deutsche Mundarten; Nordniedersächsisch aus Oldenburg (Friesische Wede und Ammerland).* (Arbeiten aus dem Institut für Lautforschung an der Universität Berlin, 5.) Leipzig: Harrassowitz.

Feyer, U. (1941) *Deutsche Mundarten; die Mundart des Dorfes Baden, Kreis Verden, grammatisch und phonetisch dargestellt.* (Arbeiten aus dem Institut für Lautforschung an der Universität Berlin, 7.) Leipzig: Harrassowitz.

Frebel, P. (1957) *Die Mundarten des westlichen Sauerlandes zwischen Ebbegebirge und Arnsberger Wald.* (Deutsche Dialektgeographie, 45.) Marburg: Elwert.

Gallée, J.H. (1895) *Woordenboek van het geldersch-overijsselsche dialect.* 's-Gravenhage: Nijhoff.

Grimme, H. (1910) *Plattdeutsche Mundarten.* (Sammlung Göschen, 461.) Leipzig: Göschen.

Gunnink, J. (1908) *Het dialect van Kampen en omstreken.* Kampen: Kok.

Hasenclever, M. (1904) *Der Dialekt der Gemeinde Hermelskirchen.* Unpub. thesis, Marburg.

Heigener, H. (1937) *Niederdeutsche Mundarten im Kreise Herzogtum Lauenburg.* (Sprache und Volkstum, 7.) Hamburg: Wachholtz.

Heymann, W. (1909) *Das Bremische Plattdeutsch.* Bremen: Winter.

Hille, H. (1939) *Die Mundart des nördlichen Harzvorlandes.* (Forschung zur Geschichte des Harzgebiets, 7.) Quedlinburg: Huch.

Holthaus, E. (1887) Die Ronsdorfer Mundart. *Zeitschrift für deutsche Philologie,* 19.

Holthausen, F. (1885) Die Remscheider Mundart. *Beiträge zur Geschichte der deutschen Sprache und Literatur,* 10.

Holthausen, F. (1886) *Die Soester Mundart. Laut- und Formenlehre nebst Texten.* (Verein für Niederdeutsche Sprachforschung, Forschungen, Bd 1.) Norden: Soltau.

Jacob, W.G.J.A (1937) *Het dialect van Grave.* 's-Hertogenbusch: Teulings.

Jedig, H. (1966) *Laut- und Formenbestand der niederdeutschen Mundart des Altai-Gebietes.* (Sitzungsberichte der sächsischen Akademie der Wissenschaften zu Leipzig, Philologisch-Historische Klasse, Band 112, Heft 5.) Berlin: Akademie-Verlag.

Jellinghaus, H. (1885) *Westfälische Grammatik: die Laute und Flexionen der ravensbergischen Mundart mit einem Wörterbuch.* 2nd ed.. Norden: Fischer.

Jongeneel, J. (1884) *Een Zuid-Limburgsch taaleigen. Proeve van vormenleer en woordenboek der dorpspraak van Heerle.* Heerlen: Weyerhorst.

Jörgensen, P. (1928/9) Formenlehre der dithmarschen Mundart. *Teuthonista,* 5.

Karsten, G. (1931) *Het dialect van Drechterland.* Purmerend: Muusses.

Kats, J.C.P. (1939) *Het phonologisch en morphologisch systeem van het Roermondsch.* Roermond-Maaseik: Romen.

Kleinn, K. (1942) *Volk und Sprache zwischen Egge und Weser.* Unpub. thesis, Münster.

Krause, G. (1895) Ortsmundarten der Magdeburger Gegend. *Niederdeutsches Jahrbuch*, 21.

Krause, G. (1896) Die Mundarten im südlichen Teile des ersten Jerichowschen Kreises. *Niederdeutsches Jahrbuch*, 22.

Krause, G. (1899/1900) Die Mundarten im nordwestlichen Teile des ersten Jerichowschen Kreises. *Niederdeutsches Jahrbuch*, 25/26.

Kühl, K. (1932) *Die Saatzig-Dramburger Mundart.* (Vorarbeiten zum Pommerschen Wörterbuch, Heft 4.) Greifswald: Bamberg.

Landheer, H.C. (1951) *Klank- en vormleer van het dialect van Overflakkee.* Assen: van Gorcum.

Lange, H. (1963) *Die Mundart der Orte Göddeckenrode und Isingerode und die Dialektgrenzen an der oberen Oker.* (Deutsche Dialektgeographie, 68 a/b.) Marburg: Elwert.

Löfstedt, E. (1933) *Ostfälische Studien I: Grammatik der Mundart von Lesse im Kreise Wolfenbüttel (Braunschweig).* (Lunds Universitets Årsskrift. n.f., avd. 1, bd 29, nr 7.) Lund: Ohlsson.

Mackel, E. (1905/6/7) Die Mundart der Prignitz. *Niederdeutsches Jahrbuch*, 31/32/33.

Mahnke, G. (1931) *Die Schlawer Mundart.* (Vorarbeiten zum Pommerschen Wörterbuch, Heft 3.) Greifswald: Bamberg.

Martin, B. (1925) *Studien zur Dialektgeographie des Fürstentums Waldeck und des nördlichen Teils des Kreises Frankenberg.* (Deutsche Dialektgeographie, 15.) Marburg: Elwert.

Maurmann, E. (1890) *Grammatik der Mundart von Mülheim an der Ruhr.* (Sammlung kurzer Grammatiken deutscher Munarten, 4.) Leipzig: Breitkopf & Härtel.

Mazereel, G. (1931) *Klank- en vormleer van het Brusselsch dialect met zijne plaatselijke verschiedenheden.* (Koninklijke Vlaamsche Akademie voor Taal- en Letterkunde, Reeks VI, nr 52.) Leuven: Vlaamsche drukkerei.

Mehlem, R. (1944) *Die Kalenberger Mundart. Eine dialektgeographische Untersuchung von 182 Dörfern.* Unpub. thesis, Hamburg.

Mertens, A.M. (1883) Het Limburgsch dialect. *Onze Volkstaal, Tweede Deel*, 4.

Mischke, K. (1936) *Rummelsburger und Bütower Mundart.* (Vorarbeiten zum Pommerschen Wörterbuch, Heft 8.) Greifswald: Bamberg.

Natau, O. (1937) *Mundart und Siedlung im nordöstlichen Ostpreussen.* (Schriften der Albertus-Universität, Geisteswissenschaftliche Reihe, 4.) Königsberg & Berlin: Ost-Europaverlag.

Nerger, K. (1869) *Grammatik des mecklenburgischen Dialekts.* Leipzig: Brockhaus.

Opprel, A. (1896) *Het dialect van Oud-Beierland.* (Dialect-Bibliotheek, 3.) Deventer: ter Braak.

Pauwels, J.L. (1958) *Het dialect van Aarschot en omstreken.* (Bouwstoffen en studiën voor de geschiedenis en de lexicografie van het Nederlands, 5.) Tongeren: Michiels.

Pickert, J. (1917) Vokalismus der Stammsilben in der Mundart von Dorsten in Westfalen. *Zeitschrift für deutsche Mundarten*, 1917.

Pirk, K. (1928) *Grammatik der Lauenberger Mundart.* (Vorarbeiten zum Pommerschen Wörterbuch, Heft 1.) Greifswald: Bamberg.

Pühn, H.J. (1956) *Ostholsteinische Mundarten zwischen Trave und Schwentine.* Unpub. thesis, Marburg.

Quiring, J. (1928) *Die Mundart von Chortitza in Süd-Russland.* München: Studentenhaus.

Röttsches, H. (1875) *Die Krefelder Mundart und ihre Verwandtschaft mit dea Altsächsischen, Angelsächsischen und Althochdeutschen.* Halle: Buchdruckerei des Waisenhauses.

Sassen, A. (1953) *Het Drents van Ruinen.* (Teksten en Studien, 13.) Assen: van Gorcum.

Schmeding, H. (1938) *Die Mundarten des Kirchspiels Lavelsloh und der angrenzenden Ortschaften.* Münster: Aschendorff.

Schönhoff, H. (1908) Emsländische Grammatik. (Germanische Bibliothek, Abt. 1, Reihe 1, Bd 8.) Heidelberg: Winter.

Schuringa, F.G. (1923) *Het dialect van de Veenkoloniën in verband met de overige tongvallen in de provincie Groningen.* Groningen: Wolters.

Schütze, M. (1953) *Dialektgeographie der goldenen Mark des Eichsfeldes.* (Mitteldeutsche Studien, 13.) Halle: Niemeyer.

Semrau, M (1915) Die Mundart der Koschneiderei. *Zeitschrift für deutsche Mundarten*, 1915.

Smout, H. (1905) *Het Antwerpsch dialect.* (Université de Gand. Receuil de Travaux, 30.) Gand: Vuylsteke.

Teirlinck, I. (1924) *Klank- en vormleer van het Zuid-Oostvlaandersch dialect.* (Zuid-Oostvlaandersch idioticon, 4.) Gent.

Tessmann, W. (1966) Abriss einer natangisch-bartischen Laut- und Formenlehre. *Niederdeutsches Jahrbuch*, 89.

Teuchert, H. (1907/8) Laut- und Flexionslehre der neumärkischen Mundart. *Zeitschrift für deutschen Mundarten*, 1907/8.

Tita, F. (1965) *Die Bublitzer Mundart.* Ed. by Schönfeld, A.. (Deutsche Dialektgeographie, 56.) Marburg: Elwert.

van Ginneken, J. (1954) *Drie Waterlandse dialecten.* (Stichting voor het bevolkingsonderzoek in de drooggelegde zuiderzeepolders, Publicaties, 18.) Alphen an den Rijn: Samsom.

van Schothorst, W. (1904) *Het dialect der Noord-West-Veluwe.* Utrecht: Kemink & zoon.

Vercouillie, J. (1885) Spraakleer van het Westvlaamsch dialect. *(Onze Volkstaal, Tweede Deel*, 1).

Wanink, G.H. (1948) *Twents-Achterhoeks woordenboek benevens grammatica.* Zutphen: Thieme.

Welter, W. (1929) *Studien zur Dialektgeographie des Kreises Eupen.* (Rheinisches Archiv, 8.) Bonn: Röhrscheid.

Welter, W. (1933) Die niederfränkischen Mundarten im Nordosten der Provinz Lüttich. (Noord- en Zuid-Nederlandsche Dialectbibliotheek, 4.) 's-Gravenhage: Nijhoff.

Wix, H. (1921) *Studien zur westfälischen Dialektgeographie im Süden des Teutoberger Waldes.* (Deutsche Dialekgeographie, 9.) Marburg: Elwert.

B: Other works

Andersen, H. (1973) Abductive and deductive change. *Lg*, 49.

Andersen, H. (1980) Morphological change: towards a typology. In Fisiak, J. (ed.) *Historical morphology.* (Trends in Linguistics, Studies and Monographs, 17.) The Hague: Mouton.

Antonsen, E.H. (1972) The Proto-Germanic syllabics (vowels). In van Coetsem, F. and Kufner, H.L. (eds) *Toward a grammar of Proto-Germanic.* Tübingen: Niemeyer.

Baetke, W. (1917) Das starke Verbum in Thomas Kantzows niederdeutscher Chronik von Pommern. *Niederdeutsches Jahrbuch*, 43.

Barbour, J.S. (1982) Productive and non-productive German verb morphology. *JL*, 18.

Behrens, H. (1924) Niederdeutsche Präteritalbildung. *Beiträge zur Geschichte der deutschen Sprache und Literatur*, 48.

Benveniste, E. (1935) Esquisse d'une théorie de la racine. In Benveniste, E. *Origines de la formation des noms en indoeuropéen.* Paris: Adrien-Maisonneuve.

Benveniste, E. (1946) Structure des relations de personne dans le verbe. *Bulletin de la Société Linguistique de Paris*, 43.

Best, K.-H. (1973) *Probleme der Analogieforschung.* München: Hueber.

Born, R. (1980) Disintegration and reintegration: the history of the verbal ablaut from Proto-Germanic to modern German. *Leuvensche Bijdragen*, 69.

Braune, W. (1973) *Gotische Grammatik.* 18th ed., by Ebbinghaus, E.A.. Tübingen: Niemeyer.

Braune, W. (1977) *Abriss der althochdeutschen Grammatik.* 14th ed., by Ebbinghaus, E.A. Tübingen: Niemeyer.

Bybee, J.L. (1980) Morphophonemic change from inside and outside the paradigm. *Lingua*, 50.

Bybee, J.L. and Brewer, M.A. (1980) Explanation in morphophonemics. *Lingua*, 52.

Bybee, J.L. and Slobin, D.I. (1982) Rules and schemas in the development and use of the English past. *Lg*, 58.

Bynon, Th. (1977) *Historical linguistics.* Cambridge: Cambridge University Press.

Foerste, W. (1952) Geschichte der niederdeutschen Mundarten. In Stammler, W. *Deutsche Philologie im Aufriss.* Berlin: Schmidt.

Franck, J. (1910) *Mittelniederländische Grammatik.* 2nd ed.. Leipzig: Tauchnitz.

Greenberg, J.H. (1966) *Language universals (with special reference to feature hierarchies).* (Janua Linguarum. Series Minor, 59.) The Hague: Mouton.

Hjelmslev, L. (1953) Prolegomena to a theory of language. Baltimore: Waverly Press.

Hogg, R.M. (1979) Analogy and phonology. *JL*, 15.

Hol, A.R. (1937) *Een tegenstelling noord:zuid in de praeterita en participia van de sterke werkwoorden.* (Noord- en zuidnederlandsche dialectbibliotheek, 6.) 's-Gravenhage: Nijhoff.

Holthausen, F. (1921) *Altsächsisches Elementarbuch.* 2nd ed.. (Germanische Bibliothek, Abt. 1, Reihe 1, Bd 5.) Heidelberg: Winter.

Hooper, J.B. (1976) *Introduction to natural generative phonology.* New York: Academic Press.

Hudson, G. (1974) The representation of non-productive alternation. In Anderson, J.M. and Jones, C. (eds) *Historical linguistics II.* (North-Holland Linguistics Series, 12b.) Amsterdam: North-Holland.

Jakobson, R. (1939) Zur Struktur des russischen Verbums. In Jakobson, R. *Selected writings II.* The Hague: Mouton.

Jakobson, R. (1957) Shifters, verbal categories and the Russian verb. In Jakobson, R. *Selected writings II.* The Hague: Mouton.

Josselson, H.H. (1953) *The Russian word count.* Detroit: Wayne University Press.

Juilland, A. and Chang-Rodriguez, E. (1964) *Frequency dictionary of Spanish words.* The Hague: Mouton.

Katara, P. (1939) *Die ursprünglich reduplizierenden Verba im Niederdeutschen. Beiträge zur Geschichte der deutschen Verbalflexion.* (Mémoires de la Société Néophilologique de Helsinki, XII.) Helsinki: Société Néophilologique.

Kiparsky, P. (1968) Linguistic universals and linguistic change. In Bach, E. and Harms, R.T. (eds) *Universals in linguistic theory.* New York: Holt, Rinehart & Winston.

Kiparsky, P. (1978) Historical linguistics. In Dingwall, W.O. (ed.) *A survey of linguistic science.* 2nd ed.. Stamford: Greylock.

Kiparsky, P. (1974) Remarks on analogical change. In Anderson, J.M. and Jones, C. (eds) *Historical linguistics II.* (North-Holland Linguistics Series, 12b.) Amsterdam: North-Holland.

Kiparsky, P. (1980) Concluding statement. In Traugott, E.C. et al. (eds) *Papers from the 4th International Conference on Historical Linguistics.* (Current Issues in Linguistic Theory, 14.) Amsterdam: Benjamins.

Kiparsky, P. (1982a) Analogical change as a problem for lingusitic theory. In Kiparsky, P. *Explanation in phonology.* (Publications in Language Sciences, 4.) Dordrecht: Foris.

Kiparsky, P. (1982b) From cyclic phonology to lexical phonology. In van der Hulst, H. and Smith, N. (eds) *The structure of phonological representations I.* Dordrecht: Foris.

Kloeke, G.G (1955) *Het taallandschap van onze noordoostelijke provincien.* (Verhandelingen der Koninklijke Nederlandse Akademie der Wetenschappen. Afd. Letterkunde. Nieuwe Reeks, 62, no. 3.) Amsterdam: Noord-Hollandsche.

Krahe, H. (1969) *Germanische Sprachwissenschaft. I: Einleitung und Lautlehre.* (Sammlung Goschen, 238/a/b.) 7th ed. by Meid, W.. Berlin: de Gruyter.

Kurylowicz, J. (1949) La nature des proces dits analogiques. Acta Linguistica, 5.

Lasch, A. (1914) *Mittelniederdeutsche Grammatik.* Hamburg: Wachholtz.

Lasch, A. (1918) Beiträge zur Geschichte des Neuniederdeutschen in Hamburg. *Niederdeutsches Jahrbuch*, 44.

Lass, R. (1980) *On explaining language change.* Cambridge: Cambridge University Press.

Lindgren, K.B. (1957) *Über den oberdeutschen Präteritumschwund.* (Suomalaisen Tiedeakatemian Toimituksia, sarja B, nide 112,1.) Helsinki.

Lloyd, A.L.. (1966) It there an a-umlaut of i in Gmc? *Lg*, 42.

Lüdtke, H. (1957) Der Ursprung des germanischen $\bar{e}^2$ und die Reduplikationspräterita. *Phonetica*, 1.

MacLintock, D.R. (1961) Die umgelauteten Praeteritopraesentia und der Synkretismus im deutschen Verbalsystem. *Beiträge zur Geschichte der deutschen Sprache und Literatur (Tübingen)*, 83.

Manczak, W. (1980) Laws of analogy. In Fisiak, J. (ed.) *Historical morphology.* (Trends in Linguistics, Studies and Monographs, 17.) The Hague: Mouton.

Marchand, J.W. (1957) Germanic short *i and *e: two phonemes or one? *Lg*, 33.

Matthews, P.H. (1974) *Morphology.* Cambridge: Cambridge University Press.

Mayerthaler, W. (1981) *Morphologische Natürlichkeit.* (Linguistische Forschungen, 28.) Wiesbaden: Athenaion.

Panzer, B. and Thümmel, W. (1971) *Die Einteilung der niederdeutschen Mundarten.* (Linguistische Reihe, 7.) München.

Paul, H. (1970) *Prinzipien der Sprachgeschichte.* Reprint of 5th ed.. Tübingen: Niemeyer.

Reuter, F. (1859) Ut de Franzosentid. In Reuter, F. *Gesammelte Werke und Briefe, Bd 4.* Neumünster: Wachholtz.

Sarauw, C.P.E. (1921) *Vergleichende Lautlehre der niederdeutschen Mundarten im Stammlande.* (Niederdeutsche Forschunger, 1.) Kobenhavn: Host & Son.

Schirmunski, V. I. (1962) *Deutsche Mundartkunde: vergleichende Laut- und Formenlehre der deutschen Mundarten.* Trsl. by Fleischer, W.. Berlin: Akademie-Verlag.

Schönfeld, M. (1965) *Historische Grammatica van het Nederlands.* 7th ed., by van Loey, A. Zutphen, Thieme.

Seebold, E. (1970) *Vergleichendes und etymologisches Wörterbuch der germanischen starken Verben.* (Janua Linguarum. Series Pratica, 85.) The Hague: Mouton.

van Coetsem, F. (1970) Zur Entwicklung der germanischen Grundsprache. In Schmitt, L.E. (ed.) *Kurzer Grundriss der germanischen Philologie bis 1500. I: Sprachgeschichte.* Berlin: de Gruyter.

van Coetsem, F. (1972) Proto-Germanic morphophonemics. In van Coetsem, F. and Kufner, H.L. *Toward a grammar of Proto-Germanic.* Tübingen: Niemeyer.

van Coetsem, F. (1980) Germanic verbal ablaut and its development. In van Coetsem, F. and Waugh, L. (eds) *Contributions to historical linguistics.* Leiden:Brill.

Vennemann, T. (1974) Words and syllables in natural generative grammar. In Bruck, A. et al. (eds.) *Papers from the parasession on natural phonology.* Chicago: Chicago Linguistics Society.

Vincent, N. (1978) Is sound change teleological?. In Fisiak, J. (ed.) *Recent developments in historical phonology.* (Trends in Linguistics, Studies and Monographs, 4.) The Hague: Mouton.

Vincent, N. (1980) Words versus morphemes in morphological change: the case of Italian -iamo. In Fisiak, J. *Historical morphology.* (Trends in Linguistics, Studies and Monographs, 17.) The Hague: Mouton.

Weijnen, A.A. (1966) *Nederlandse dialectkunde.* 2nd ed.. (Studia Theodisca, 10.) Assen: van Gorcum.

Wurzel, W.U. (1970) *Studien zur deutschen Lautstruktur.* (Studia Grammatica, 8.) Berlin: Akademie-Verlag.